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Katrina and Rita Impacts on Gulf Coast Populations: First Census Findings

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An analysis of the first U.S. Census Bureau data regarding the demographic impacts of Hurricanes Katrina and Rita on the population of the Gulf Coast region finds that:

- **Hurricane-impacted areas of the Gulf Coast sustained both population gains and losses over the last half of 2005, with the biggest losses experienced by the New Orleans metropolitan area.** Orleans Parish, LA lost almost two-thirds of its population during this period, and adjacent St. Bernard Parish, LA lost a stunning 95 percent of its inhabitants. Meanwhile, counties in both the Houston and Baton Rouge metro areas experienced big population gains.

- **In the New Orleans metropolitan area, hurricane-induced loss produced a population that was more white, less poor, and more transitory than the pre-hurricane population.** These changes resulted from the disproportionate out-migration, and slower return, of lower-income and black residents from the entire metropolitan area after the storms.

- **In contrast, counties along the Mississippi coast lost a sizeable share of their white residents and homeowners after the hurricane, while other Gulf Coast metro areas, especially those that gained residents, experienced little overall shifts in their demographic profiles.** While Baton Rouge gained population, the overall shift in its demographic make-up has been comparatively slight, suggesting minimal impact from New Orleans evacuees.

This analysis provides a "baseline" portrait of the impact of Hurricanes Katrina and Rita on population shifts and changing characteristics in the Gulf Region in the immediate months after the storms hit.

Introduction

In the late summer of 2005, Hurricanes Katrina and Rita wrought severe damage along much of the Gulf Coast, stretching from Alabama westward to Texas, with perhaps the most devastating consequences for the greater New Orleans area.

Since Hurricane Katrina made landfall on August 29, 2005, a wide range of think tanks, university researchers, journalists, and public agencies have attempted to assess its impact on the population of this region (see references for a broad round-up of these assessments). These researchers have addressed questions around how the hurricanes affected the population sizes of impacted areas, and to what degree they disproportionately affected particular segments of the population. On the latter question, some studies have suggested that, especially in New Orleans, the physical and human devastation generated greater out-migration of minorities, the economically less well-off, and those in inferior housing.

Most of this research has utilized either small surveys or "indirect" assessments, to understand the social and demographic impacts of these hurricanes. The indirect assessments have tended to look at which areas were flooded and who had lived there at the time of the 2000 decennial census. Thus, these studies were not able to examine who actually resided in the flooded areas in the summer and fall of 2005, immediately before and after the hurricanes hit. Moreover, these studies focused primarily on the New Orleans area and southern Mississippi, rather than the broader hurricane-impacted region, including areas to the west particularly affected by Hurricane Rita.

Using two new data releases by the U.S. Census Bureau, this report provides new and more direct measures of the populations residing in counties and metropolitan areas in the affected Gulf Coast region, including their size and characteristics. Following a discussion of the data and methodology employed, we examine three basic subjects: (1) which areas gained and lost the most population over the July 1, 2005 to January 1, 2006 period; (2) how the demographic, economic, and housing attributes of the New Orleans metropolitan area changed subsequent to the hurricanes' impact; and (3) how populations in other growing and declining areas along the Gulf Coast were affected.

Data and Methodology

This analysis is based on two data products prepared by the Census Bureau to describe population changes to the Gulf Coast areas affected by Hurricanes Katrina and Rita in August and September of 2005. Because the effects of the hurricanes were so devastating, the Census Bureau used special methods and procedures to develop unique estimates of housing and population for the affected areas before and after the storms. These areas include 117 "hurricane-impacted" counties and parishes in four states: Alabama, Mississippi, Louisiana, and Texas. These counties and parishes were designated by the Federal Emergency Management Agency (FEMA) as receiving "individual and public assistance" as of October 7, 2005 for Hurricane Katrina, and October 20, 2005 for Hurricane Rita. They thus comprise areas where the storms produced direct damage, as well as areas to which significant numbers of individuals displaced by the storms relocated in the aftermath.

To shed new light on the size of populations in the Gulf Coast region before and after the storms, the Census Bureau has released *Special Population Estimates for Impacted Counties in the Gulf Coast area* (Special Population Estimates). These estimates allow researchers to compare populations in households on July 1, 2005

(roughly two months prior to the hurricanes) and January 1, 2006 (roughly four months subsequent to the hurricanes) for 117 counties and parishes, and selected metropolitan areas, within the greater Gulf Coast region (Map 1). The estimates take into account the Census Bureau's usual population estimation procedures, adjusted by U.S. Postal Service's "change of address" forms for persons who relocated across these counties during the period after the hurricanes hit. These data are not part of the Census Bureau's ongoing estimates series, which will resume with annual population estimates for July 1, 2006. [1]

Utilizing direct survey methods, the Census Bureau has also released the *2005 American Community Survey* (ACS) *Special Product for the Gulf Coast Area* (ACS Special Product). This ACS Special Product is the result of a much broader survey effort than has been conducted by any university or policy institute to date, and is based on sophisticated sampling techniques honed by the Census Bureau. The data provide estimates of average population attributes for households residing in affected areas for two periods. The January to August 2005 period represents the eight months prior to the hurricanes' impact, and is referred to herein as pre-hurricanes. The four months between September and December of 2005 are referred to as post-hurricanes. These data do not reflect current conditions in the Gulf Coast area, but they do provide an understanding of demographic conditions preceding the storms and shortly thereafter.

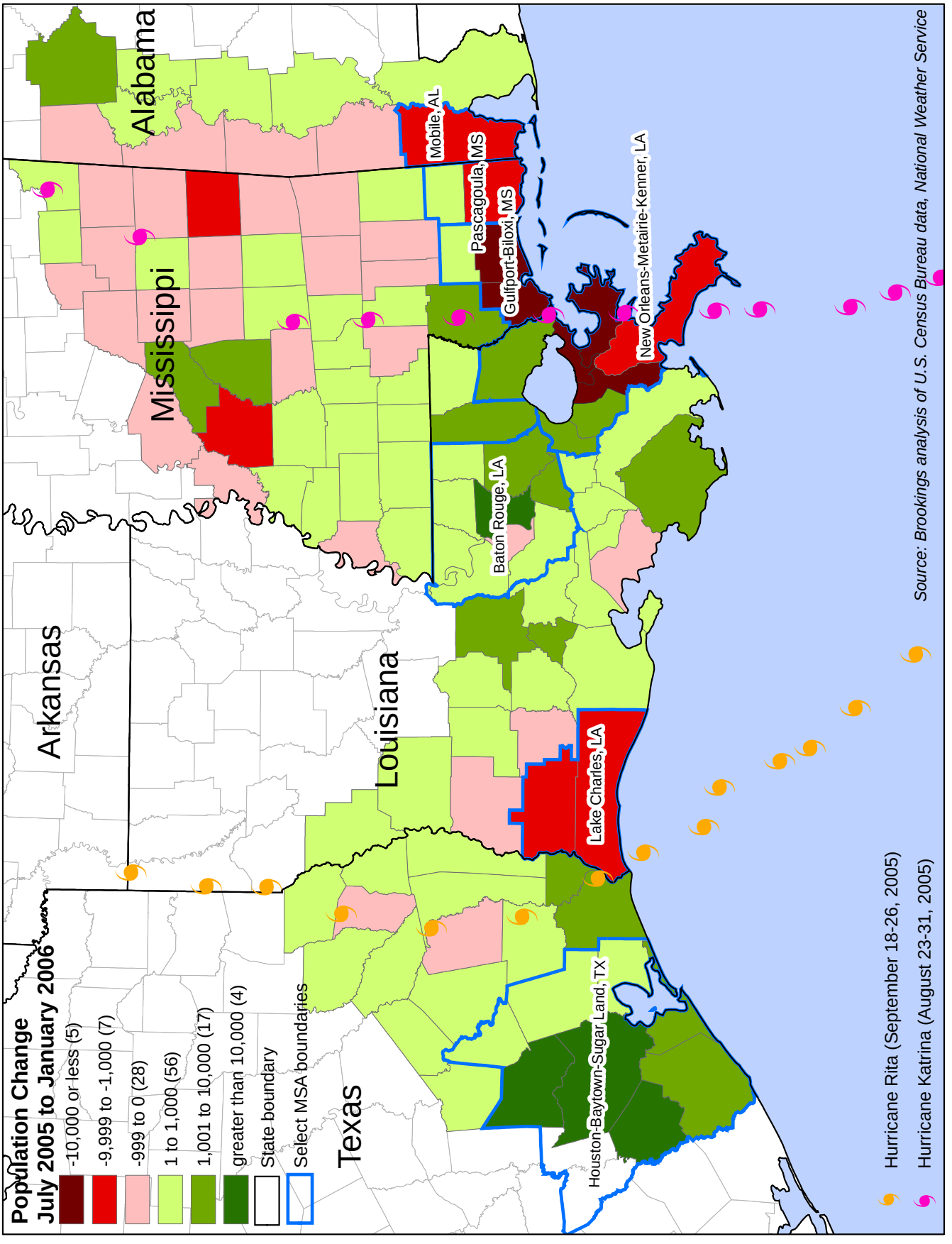
Although the ACS Special Product's survey sample size is smaller than that available with a full year of data in the regular ACS, it provides the best possible information to date for assessing the impacts of Hurricanes Katrina and Rita on the populations of the broad Gulf Coast region. As with the Special Population Estimates, the counties identified in the ACS Special Product are located in the states of Alabama, Mississippi, Louisiana, and Texas. In addition to the 117 counties identified in the Special Population Estimates, the ACS Special Product also provides information on the residents of counties and parishes in the remainder of these four states. Standard annual ACS estimates will resume with the scheduled release of data for 2005 in August 2006. [2]

This report examines data from the Special Population Estimates and the ACS Special Product at the county/parish level. Because of the difficulty in gaining access to affected areas, in some instances the Census Bureau had an insufficient number of interviews to release ACS Special Product data regarding individual parishes and counties. For example, the devastation made interviewing difficult in many parts of the New Orleans metropolitan area, particularly Orleans and St. Bernard parishes.

Therefore, this report's analyses of demographic and economic data from the ACS Special Product group parishes and counties together into metropolitan statistical areas or groupings of counties. The New Orleans metro area contains seven parishes: Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. John the Baptist, and St. Tammany.

Thirteen (13) metropolitan areas overall are represented in the 117-county disaster area: Baton Rouge, LA; Beaumont-Port Arthur, TX; Gulfport-Biloxi, MS; Hattiesburg, MS; Houma, LA; Houston, TX; Jackson, MS; Lafayette, LA; Lake Charles, LA; Mobile, AL; New Orleans, LA; Pascagoula, MS; and Tuscaloosa, AL.

Map 1. Hurricane Impacted Areas of Texas, Louisiana, Mississippi and Alabama



Findings

A. Hurricane-impacted areas of the Gulf Coast sustained both population gains and losses over the last half of 2005, with the biggest losses experienced by the New Orleans metropolitan area.

Map 1 provides a basic overview of the population growth and decline patterns for the 117 hurricane-impacted counties between July 1, 2005 and January 1, 2006. The greatest absolute population declines occurred in parishes and counties associated with five metropolitan areas: New Orleans, LA; Gulfport-Biloxi, MS; Lake Charles, LA; Pascagoula, MS; and Mobile, AL. Overall, 40 of the 117 counties lost population. At the county/parish level, Orleans Parish, LA, contiguous with the city of New Orleans, experienced by far the largest absolute population decline (Table 1). St. Bernard, LA and Jefferson, LA parishes followed, also within the New Orleans metropolitan area. Harrison and Hancock counties, part of the Gulfport-Biloxi metro area, were not far behind. The remaining counties ranking among the top ten decliners are located within the Lake Charles, LA, Pascagoula, MS,

Table 1. Parishes and Counties with Greatest Population Gains and Losses, Hurricane-Impacted Region, July 2005–January 2006

			Population Change July 2005–January 2006	
Rank	**Parish or County**	**Inside Metro Area**	**Numeric Change**	**Percent Change**
	Greatest Losses			
1	Orleans, LA	New Orleans, LA	-278,833	-63.8
2	St. Bernard, LA	New Orleans, LA	-61,215	-94.8
3	Jefferson, LA	New Orleans, LA	-37,273	-8.3
4	Harrison, MS	Gulfport-Biloxi, MS	-30,713	-16.5
5	Hancock, MS	Gulfport-Biloxi, MS	-11,111	-24.0
6	Plaquemines, LA	New Orleans, LA	-8,118	-28.7
7	Jackson, MS	Pascagoula, MS	-7,938	-5.9
8	Calcasieu, LA	Lake Charles, LA	-6,070	-3.4
9	Mobile, AL	Mobile, AL	-2,334	-0.6
10	Cameron, LA	Lake Charles, LA	-1,961	-20.7
	Greatest Gains			
1	Harris, TX	Houston, TX	92,824	2.5
2	East Baton Rouge, LA	Baton Rouge, LA	16,965	4.3
3	Fort Bend, TX	Houston, TX	15,410	3.4
4	Montgomery, TX	Houston, TX	11,227	3.0
5	Tangipahoa, LA	nonmetro	6,240	6.0
6	Brazoria, TX	Houston, TX	5,636	2.1
7	Galveston, TX	Houston, TX	4,723	1.7
8	Ascension, LA	Baton Rouge, LA	4,273	4.8
9	Pearl River, MS	nonmetro	3,806	7.3
10	Livingston, LA	Baton Rouge, LA	3,241	3.0

Source: Brookings analysis of U.S. Census Bureau data

Table 2. Metropolitan Areas with Greatest Population Gains and Losses, Hurricane-Impacted Region, July 2005–January 2006

		Population Change July 2005–January 2006	
Rank	**Metropolitan Area**	**Numeric Change**	**Percent Change**
	Greatest Losses		
1	New Orleans, LA	-378,029	-29.2
2	Gulfport-Biloxi, MS	-41,517	-16.8
3	Lake Charles, LA	-8,031	-4.2
4	Pascagoula, MS	-7,448	-4.8
5	Mobile, AL	-2,334	-0.6
	Greatest Gains		
1	Houston, TX *	130,603	2.5
2	Baton Rouge, LA	26,727	3.8
3	Beaumont-Port Arthur, TX	4,037	1.1
4	Lafayette, LA	2,841	1.2
5	Tuscaloosa, AL	2,028	1.1
6	Houma, LA	1,823	0.9
7	Jackson, MS	1,754	0.3
8	Hattiesburg, MS	449	0.4

*Only 8 of 10 component counties of the Houston, TX MSA were available in these population estimates; missing are the Texas counties of Austin and Waller

Source: Brookings analysis of U.S. Census Bureau data

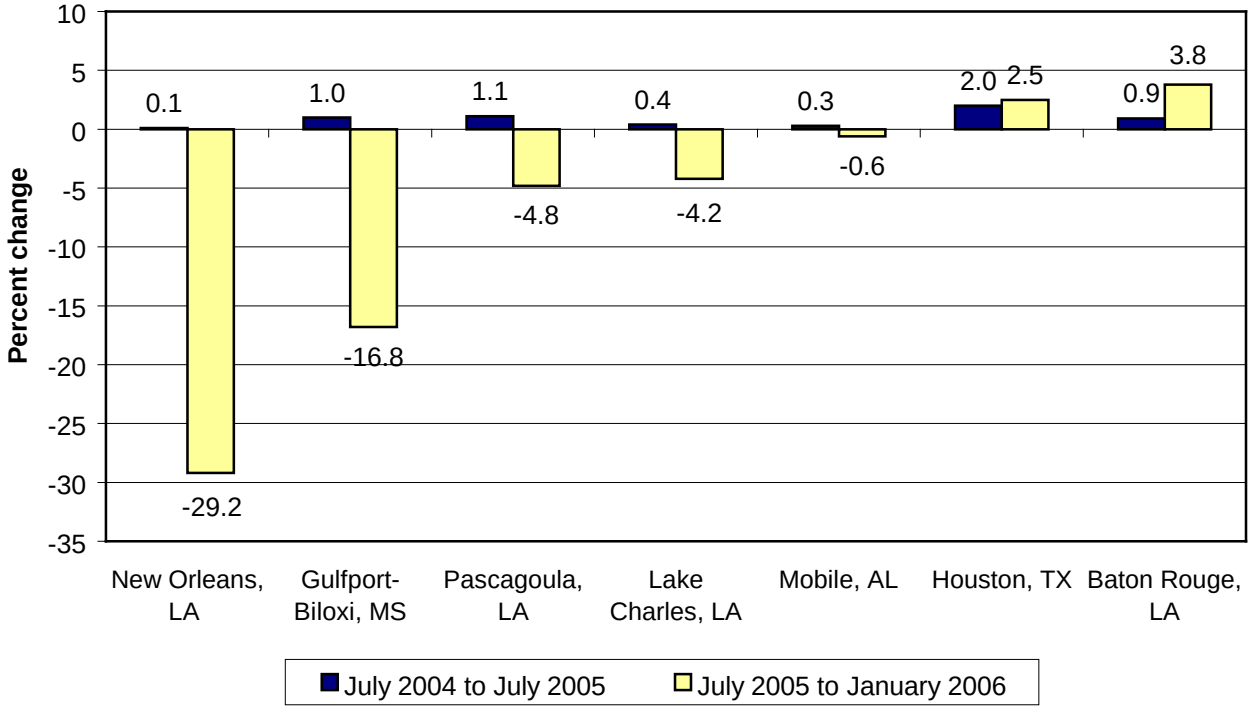
and Mobile, AL metro areas. The 10 counties and parishes in Table 1 account for practically all (98.5 percent) of the overall population loss (-452,018) occurring in the 40 counties and parishes that lost population between July 1, 2005 and January 1, 2006. The percentage population declines were most dramatic in Orleans Parish, LA (64 percent drop) and adjacent St. Bernard Parish (95 percent drop).

These hurricane induced population declines marked a dramatic shift from previous patterns. As a group, these counties and parishes declined by 2,192 people over the entire year preceding these estimates (July 1, 2004 to July 1, 2005). Indeed, many areas, especially those on the Mississippi Coast with its gaming industry, experienced population gains during that year. (Appendix A shows population changes for county and parish components for all metropolitan areas in the hurricane-impacted Gulf Region.)

Indeed, the changes between the last half of 2005 and the previous year for selected metropolitan areas, illustrated in Table 2 and Figure 1, demonstrate the extent of Katrina's and Rita's impact along the Gulf Coast. In addition to several metro areas that lost population subsequent to the storms, two metropolitan areas, Baton Rouge and Houston, gained significant population over the latter half of 2005, in large part due to Katrina and Rita evacuees relocating to these areas.

The bottom portion of Table 1 shows that the counties and parishes gaining the most population in the region likely captured this "spillover" migration from heavily affected coastal metropolitan areas. Baton Rouge and Houston have

Figure 1. Population Change for Selected Gulf Coast Metropolitan Areas, July 2004 to July 2005, and July 2005 to January 2006



Source: Brookings analysis of U.S. Census Bureau data

been identified as the two most common destinations of evacuees leaving New Orleans, and eight of the top ten gainers are located in one of these areas. Moreover, Tangipahoa Parish, LA lies adjacent to Baton Rouge and directly north of New Orleans; and Pearl River County, MS lies just north of the Gulfport-Biloxi metropolitan area. The gains in these 10 counties and parishes alone reflect 82 percent of the total population increase occurring in the 77 counties and parishes in the hurricane-impacted region that grew between July 1, 2005 and January 1, 2006.

Not all of the growth, however, is due to evacuee "spillover." This is especially true in Houston, which for some time has successfully attracted migrants and immigrants from other parts of the country and abroad. Although Harris County, TX (containing the city of Houston) led all others in the affected region by gaining 93,000 people over the last six months of 2005, it also gained nearly 52,000 people during the entire previous year. In the Houston metropolitan area, Fort Bend gained 15,000 people from July 1, 2005 to January 1, 2006, compared with 21,000 in the previous year. "Spillover" migration likely had a larger impact on Baton Rouge. While East Baton Rouge Parish (containing the city of Baton Rouge) sustained a minimal population loss between July 2004 and July 2005, it gained almost 17,000 people over the last six months of 2005.

Finally, it should be noted that the overall population change occurring between July 1, 2005 and January 1, 2006, may slightly understate the declines sustained by metropolitan areas like New Orleans, and the gains experienced in areas like Baton Rouge, in the immediate aftermath of the hurricanes. A Claritas analysis

of U.S. Postal Service change-of-address data between October 2005 (one month after Katrina hit) and December 31, 2005, shows a small "return" migration to New Orleans over the last three months of the four-month post-hurricane period.[3] These same data also reflected small declines in the initial post-hurricane growth of Baton Rouge.

B. In the New Orleans metropolitan area, hurricane-induced loss produced a population that was more white, less poor, and more transitory than the pre-hurricane population. A great deal of speculation has surrounded Hurricane Katrina's impacts on the demographic and economic profile of New Orleans. The new ACS Special Product provides clear-cut findings that reinforce many earlier conclusions based on indirect estimates or small-survey analyses. The large sample size associated with the ACS Special Product permits a comparison of the average population of the New Orleans metropolitan area over the first eight months of 2005 versus its average population after Katrina hit, between September and December of 2005. As noted in the methodology section, while the sample was large enough to conduct this analysis for the New Orleans metropolitan area, it was not possible to conduct such comparisons for the city of New Orleans alone. Based on the fact that the city sustained generally greater damage than the rest of the metro area as a whole, demographic and economic differences before and after the storm for the city of New Orleans (as well as St. Bernard parish) are likely much more dramatic than those visible across the whole of the metropolitan area.

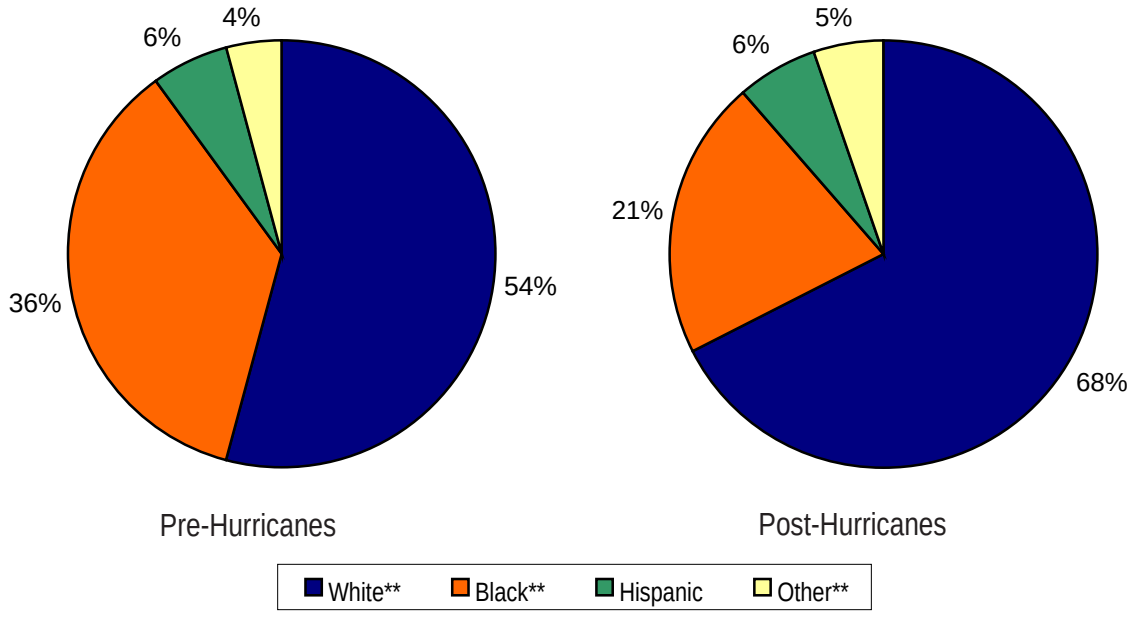
Figures 2 through 5 and Table 3 highlight some of the major differences between the New Orleans area's populations before and after the hurricanes. When looking at the demographic profiles for each of these two parts of the year, the reader should bear in mind that the area shrunk by 29 percent in the latter half of 2005. Thus, the post-hurricane period profile largely reflects the demographic composition of the population "left behind" by population out-migration. Comparisons between the post and pre-hurricane compositions, therefore, suggest which population groups were less prone to leave as a result of the hurricane.

Figure 2 highlights the major differences between the pre- and post-hurricane populations of New Orleans with respect to race and ethnicity, a matter of great public interest. These data make clear that there was a significant shift in the metropolitan area's racial and ethnic make-up between the two periods. Prior to the hurricanes, a little more than half of the New Orleans metropolitan population (54 percent) was white, and a little more than a third (36 percent) was black. After the hurricanes, the white percentage shot up to two-thirds of the total (68 percent), while the black population share declined to about one-fifth (21 percent). The share of Hispanics in the region changed minimally over this period, staying at about 6 percent.

Note that the American Community Survey does not survey transient or group quarters populations, such as motels and dormitories. Many media reports about the increase in Latino workers in the post-storm recovery period recounted that this temporary population was largely living in makeshift residences, and thus they were likely uncounted by the ACS. Nonetheless, these statistics make plain that the population loss of New Orleans due to the hurricanes was disproportionately African American.

One characteristic of New Orleans' population which has been highlighted in earlier reports is its strong "rootedness." That is, a much higher share of its residents were born in the same city and state than in other places, and therefore exhibited a strong attachment to the area. As

Figure 2. Racial and Ethnic Composition of Population, New Orleans Metropolitan Area, Pre- and Post-Hurricane Periods*



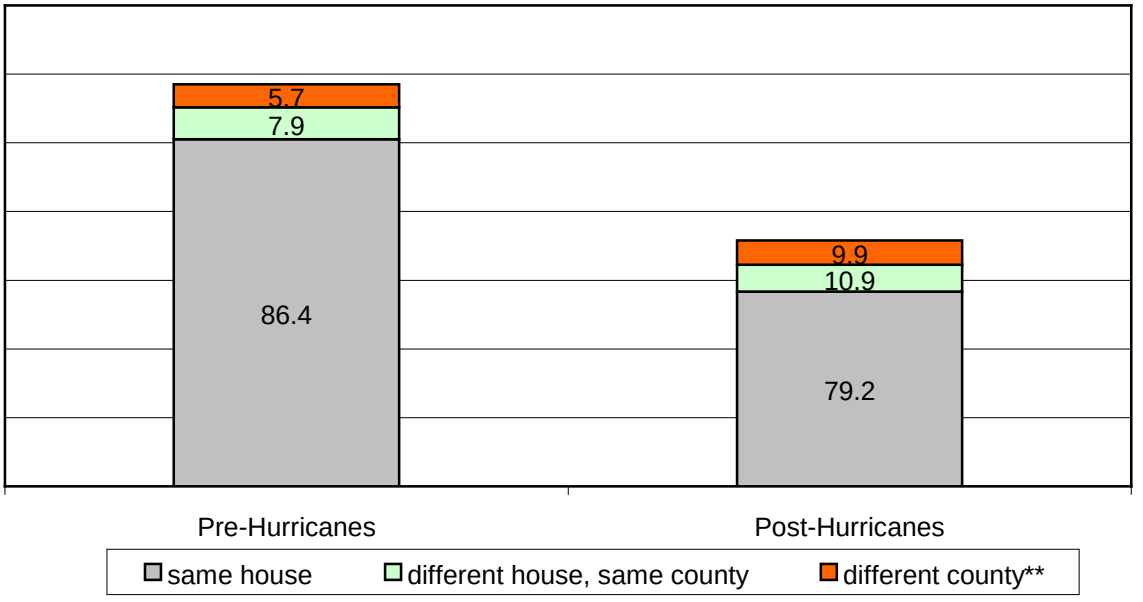
* Pre-hurricane period is January through August 2005; post-hurricane period is September through December 2005
** Non-Hispanic
Source: Brookings analysis of U.S. Census Bureau data

Figure 3 shows, post-hurricane as compared with pre-hurricane New Orleans had a significantly smaller share of its population living in the same residence "one year ago" and a significant increase in the share of residents who moved within or between counties during the previous year. This suggests that a large number of long-term "rooted" people left the area entirely in the wake of the storms, and a few others moved within the metropolitan area. This does not necessarily mean that those who left the area will not eventually return. Indeed, the argument we have made previously is that, given their strong attachment, many of these out-migrants will come back in due course.

A third important change in the New Orleans population was a significant decline in the number of low-income households. This is especially pronounced among those making less than $15,000 per year, leaving a noticeably higher percentage of households with incomes at or above $75,000 (Figure 4). The post-storm mean household income in the New Orleans area, at $64,000, was significantly higher than the pre-storm value ($55,000).

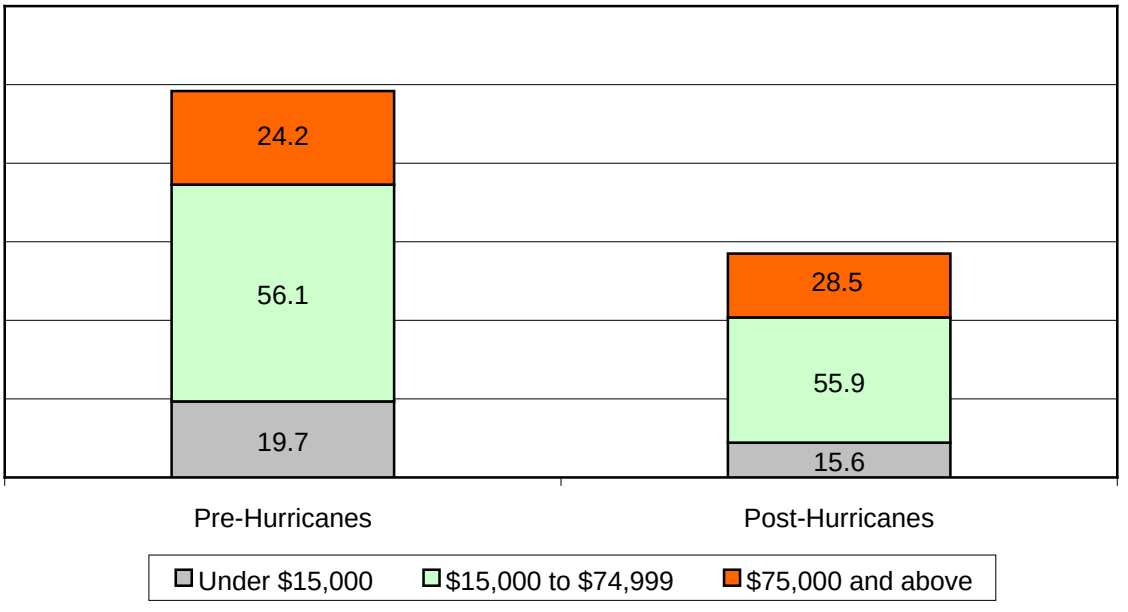
This selective loss of low-income residents is further reflected in the metropolitan area's poverty decline (Table 3). The family poverty rate in the New Orleans metropolitan area, which stood at 14 percent prior to the hurricanes, was reduced to 8.5 percent afterward. After the storms, the region's remaining families with children under 18, and especially female-headed families, were far less likely to be poor than beforehand. This indicates that poor families, especially those headed by single parents, were more likely to have left the area because of the hurricanes. Still, the post-storm employment

Figure 3. Place of Residence One Year Ago (percent distribution), New Orleans Metropolitan Area, Pre- and Post-Hurricane Periods*



Note: size of stacked bars reflect the relative size of the pre- and post- hurricane populations
* Pre-hurricane period is January through August 2005; post-hurricane period is September through December 2005
** Includes those living in other states and abroad
Source: Brookings analysis of U.S. Census Bureau data

Figure 4. Household Income (percent distribution), New Orleans Metropolitan Area, Pre- and Post-Hurricane Periods*



Note: size of stacked bars reflect the relative size of the pre- and post- hurricane populations
* Pre-hurricane period is January through August 2005; post-hurricane period is September through December 2005
Source: Brookings analysis of U.S. Census Bureau data

rate (60 percent) dropped from its pre-storm level (65 percent), though employment opportunities have certainly improved since the time of the survey.

Another result of this selective out-movement from the New Orleans area was an increase in the share of residents who are homeowners. The percentage of households who were renters dropped from 36 percent pre-storm to 27 percent post-storm (Figure 5). And those owners who left the area appeared to have resided in lower-priced homes. A significantly lower share of residents post-hurricanes lived in homes valued under $100,000 than before the storms. Those who left also seemed substantially more likely to have lived in older homes built prior to 1950, while those who stayed were more likely to have lived in homes built since 1980. The dramatic increase in the metro area's vacancy rate (from 11 to 32 percent) signifies this widespread out-migration. This indicator should change as more evacuees and new migrants enter the area and rehabilitate available housing.

The final change noted between the two periods is the decline in the population that does not own a vehicle. One of the major stories in the immediate aftermath of Hurricane Katrina was that many long-term residents who lacked a vehicle did not have the means or wherewithal to leave the city on their own as the hurricane approached. Many of these residents were initially directed to temporary shelters and then later evacuated out of the city when those shelters were damaged by Katrina. These data show that, at least for the period observed here, these people stayed away while those who had access to vehicles seemed to return.

Overall the picture painted here is of an immediate post-Katrina evacuation from the entire New Orleans metropolitan area that was disproportionately comprised of black and less well-off segments of its population. Evidence from other sources suggests that, both prior to January 1, 2006 and thereafter, many nearby New Orleanians have returned to begin rehabilitating their homes and re-integrating into the labor force. The same evidence suggests that less well-off New Orleans residents migrated farther afield to places like Houston and Atlanta, and their status as renters, the greater devastation to their homes, or their precarious financial or labor force status may present obstacles to their short-term return to the region.

C. In contrast, counties along the Mississippi coast lost a sizeable share of their white residents and homeowners after the hurricane, while other Gulf Coast metro areas, especially those that gained residents, experienced little overall shifts in their demographic profiles. After New Orleans, the second-most heavily impacted area by the hurricanes includes the coastal counties of Mississippi: Hancock, Harrison, and Jackson, situated in the Gulfport-Biloxi and Pascagoula metropolitan areas. These three counties lost a combined 13.6 percent of their populations during the last half of 2005.

The impacts of the hurricanes in coastal Mississippi on the area's racial and ethnic profile differed from those in greater New Orleans (Table 4). Unlike the latter area, coastal Mississippi became markedly less white. The white share of population in these coastal counties declined substantially, from 78 percent before the storms to 69 percent after the storms, due to hurricane-related population dispersal. At the same time, the black share of population rose from 17 percent to 27 percent.

Socioeconomic changes in this region also contrast with those occurring in the New Orleans area. The percentage of resident households who are homeowners declined after the hurricane, versus the increase experienced in greater New Orleans. In addition, the percent-

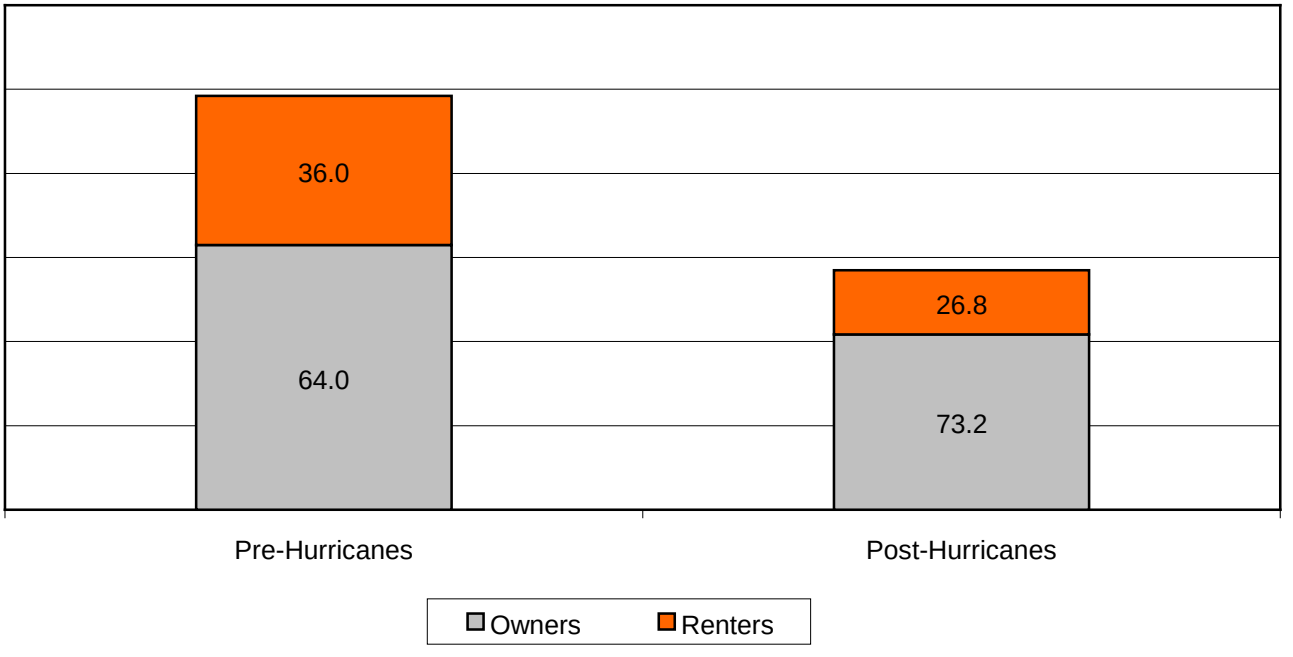
age of families living below poverty did not decline as in New Orleans. And while median household income increased slightly, more detailed data show a significant post-hurricane decline in the share of Mississippi Gulf Coast households making over $200,000 per year. Overall, out-migration from the Mississippi coast seems to have affected wealthier people and properties than in the New Orleans area, where poor, less well-off neighborhoods were more severely impacted.

One area in which the Mississippi coast does parallel New Orleans regards a rise in population mobility. The share of individuals who lived in a different house than one year before rose from 18 percent pre-hurricanes to 25 percent post-hurricanes. More detailed data show that the increase was especially high among people who had moved within the same county, suggesting that a large share of evacuees relocated a little farther inland.

Largely due to the impact of Hurricane Rita in September 2005, the Lake Charles, LA metropolitan area lost 4 percent of its population in the last half of 2005, compared with a modest gain in the previous year. Yet compared with New Orleans and coastal Mississippi, the storm's impact did not produce a noticeable change in the metropolitan area's basic demographic and economic profile. The area's racial and ethnic composition remained much the same after the storm as before, as did its median household income, family poverty level, and homeownership rate. The share of residents that had recently moved was actually higher before the hurricane hit, suggesting that dislocated households were disproportionately recent movers within the area. The fact that the median age declined by over 3 years after the storm further suggests that households without children were most likely to vacate.

Baton Rouge was among the leading areas experi-

Figure 5. Homeownership Status (percent distribution), New Orleans Metropolitan Area, Pre- and Post-Hurricane Periods*



Note: size of stacked bars reflect the relative size of the pre- and post- hurricane populations
* Pre-hurricane period is January through August 2005; post-hurricane period is September through December 2005
Source: Brookings analysis of U.S. Census Bureau data

Table 3. Selected Characteristics for the New Orleans Metropolitan Area: Pre- and Post-Hurricane Periods*

	(% unless otherwise noted)		
Person and Household Characteristics	**Pre-Hurricanes**	**Post-Hurricanes**	**Difference**
Age			
44 and younger	60.8	55.4	-5.4
45 and older	39.2	44.6	5.4
TOTAL	100.0	100.0	
Median age (years)	37.7	41.6	3.9
Employment Status (population 16 and older)			
In labor force	64.5	59.8	-4.7
Not in labor force	35.5	40.2	4.7
TOTAL	100.0	100.0	
Unemployed (civilian labor force)	8.6	12.6	4.0
Households by Type			
Family households (families)	64.5	66.6	2.1
With own children under 18 years	28.5	26.7	-1.8
Married-couple families	41.9	46.9	5.0
With own children under 18 years	16.6	19.1	2.5
Female householder, no husband present	18.2	15.1	-3.1
With own children under 18 years	10.3	5.9	-4.4
Non-family households	35.5	33.4	-2.1
Householder living alone	30.3	28.4	-1.9
65 years and over	10.0	8.5	-1.5
TOTAL	100.0	100.0	
Families Below Poverty			
All families	14.0	8.5	-5.5
With related children under 18	21.3	15.9	-5.4
Female householder, no husband present	35.0	18.3	-16.7
Owner-Occupied Units (value)			
$99,999 or less	29.3	19.4	-9.9
$100,000 to $299,999	59.7	65.8	6.1
$300,000 or more	11.0	14.8	3.8
TOTAL	100.0	100.0	
Median Home Value (dollars)	135,424	151,449	16,025

Table 3. Selected Characteristics for the New Orleans Metropolitan Area: Pre- and Post-Hurricane Periods*—Continued

	(% unless otherwise noted)		
Person and Household Characteristics	**Pre-Hurricanes**	**Post-Hurricanes**	**Difference**
Year Structure Built			
1980 or later	28.8	35.6	6.8
1950 to 1979	49.1	48.9	-0.2
1949 or earlier	22.1	15.5	-6.6
TOTAL	100.0	100.0	
Housing Occupancy			
Total housing units			
Occupied housing units	89.2	68.2	-21.0
Vacant housing units	10.8	31.8	21.0
TOTAL	100.0	100.0	
Vehicles Available			
No vehicles available	13.6	5.8	-7.8
1 vehicle available	38.4	37.3	-1.1
2 vehicles available	34.3	41.0	6.7
3 or more vehicles available	13.7	15.9	2.2
TOTAL	100.0	100.0	

* Pre-hurricane period is January through August 2005; post-hurricane period is September through December 2005
Source: Brookings analysis of U.S. Census Bureau data

encing population gains from "spillover" migration of hurricane-related evacuees. The metropolitan area grew by nearly 4 percent during the last half of 2005, compared with modest 1 percent growth over the previous year. In the period following the storms, the white share of the Baton Rouge area's population increased modestly, implying a selective in-migration of white evacuees. Beyond a small uptick in the recent mobility of its population, however, the change in the Baton Rouge area's demographic and economic profile was quite muted. This suggests that the large number of low income, minority migrants that left New Orleans were largely headed to destinations other than Baton Rouge.

Similarly, other Gulf Region areas visible in the new ACS Special Product, including those experiencing heavy post-hurricane growth (such as Harris County, TX, home of the city of Houston), did not seem to undergo dramatic economic or demographic shifts subsequent to the storms. Although these shifts could be meaningful for neighborhoods and small communities within these larger areas, they are not apparent when examining larger jurisdictions. Greater New Orleans, and to a lesser extent, coastal Mississippi, were the only areas that appeared to undergo deep and broad demographic/economic changes as a result of the hurricanes.

Table 4. Selected Characteristics for Pre- and Post Hurricane Periods:* Mississippi Coast, Lake Charles, LA, and Baton Rouge, LA Metropolitan Areas

	Mississippi Coast**			Lake Charles, LA			Baton Rouge, LA		
Person and Household Characteristics	**Pre-Hurricanes**	**Post-Hurricanes**	**Difference**	**Pre-Hurricanes**	**Post-Hurricanes**	**Difference**	**Pre-Hurricanes**	**Post-Hurricanes**	**Difference**
Race and Ethnicity									
White***	78.0	68.6	-9.4	76.2	76.6	0.4	60.9	63.6	2.7
Black***	16.7	26.8	10.1	20.5	19.7	-0.8	33.9	32.4	-1.5
Hispanic	2.1	1.6	-0.5	1.4	2.2	0.8	2.8	1.4	-1.4
Other***	3.2	3.0	-0.2	1.9	1.5	-0.4	2.4	2.6	0.2
TOTAL	100.0	100.0		100.0	100.0		100.0	100.0	
Median Age (years)	35.1	35.0	-0.1	38.9	35.3	-3.6	33.9	34.4	0.5
Residing in Different House 1 Year Ago	17.7	25.1	7.4	19.7	16.1	-3.6	17.0	20.2	3.2
Median Household Income ($)	40,090	44,569	4,479	35,525	36,687	1,162	40,843	40,793	-50
Families Below Poverty	12.7	13.9	1.2	13.4	14.2	0.8	14.0	13.4	-0.6
Percent Homeowners	69.3	63.5	-5.8	71.1	71.8	0.7	69.7	69.1	-0.6

* Pre-hurricane period is January through August 2005; post-hurricane period is September through December 2005
** Includes Mississippi counties Hancock, Harrison (part of Gulfport-Biloxi, MS metropolitan area) and Jackson (part of Pascagoula, MS metropolitan area)
***Non-Hispanic
Source: Brookings analysis of U.S. Census Bureau data

Conclusion

Population mobility of the kind we have seen after Hurricanes Katrina and Rita ravaged the Gulf Coast states is rare. Although the U.S. population tends to be very residentially mobile, it is usually by choice, and it occurs as people pursue new job or schooling opportunities, make life course transitions, or change housing. Indeed, the storms of 2005 were of the worst order of magnitude and the population dispersal they induced was the largest the United States has experienced during such a brief moment in time.

The data presented here represent the first comprehensive and direct information about the demographic impact on the Gulf Coast. For the purpose of assessing the short-term impact that this disaster imposed on the affected region, it was fortuitous that the U.S. Census Bureau was already in the field in 2005, for the first full-sample implementation of the American Community Survey. This allowed a detailed and direct assessment of the population in all of the 117 hurricane affected counties/parishes.

This analysis shows that metropolitan coastal areas were heavily impacted, but that Hurricane Katrina disproportionately displaced a specific

population of greater New Orleans: residents who were more likely to be black, poor, in households with children headed by women, in rental housing and older housing, and with no vehicles available. The finding that people with these characteristics are missing from the greater New Orleans metropolitan area in the immediate post-hurricane period indicates that they were displaced farther from the core of this area. If more finely-grained geographical data were available for areas of displacement, we may be able to see their presence in communities elsewhere in Louisiana, in Houston and in other regions outside the areas included in this special data tabulation. Yet the analysis makes clear that despite the displacement, these migrants did not alter appreciably the demographic profile of the nearby Baton Rouge metropolitan area or most of the other parts of Louisiana.

The next biggest impact of the Hurricane was felt by the coastal counties of Mississippi which are part of the Gulfport-Biloxi and Pascagoula metropolitan areas. In contrast to New Orleans, however, these counties were left with a population that had a larger share of minority residents, a lower level of homeownership and no significant decline in poverty. In essence, while the poor and less well-off residents of New Orleans bore the greatest brunt of Katrina, the storm had a more egalitarian effect on the population of coastal Mississippi.

Our examination of the data for other hurricane impacted areas in the Gulf Coast region reveals that while a great deal of population shifting had occurred, only minor changes have taken place in the race and ethnic, economic and socio-demographic profiles for most of these areas. At least at the broad metropolitan and county levels, changes in population profiles were slight in comparison to the major changes registered in New Orleans and on the Mississippi coast.

While many observers have looked forward to receiving these data and the meaning derived from them, they still hold the answers to only a limited moment in time. The strength of these data, which the present report begins to reveal, is that they provide a "baseline" portrait of this disaster's impacts on a wide ranging population in the immediate months after the storms hit. As such, they provide an important benchmark from which to judge the continued reconstruction and development efforts that are underway in this hard-hit region.

Appendix A. Population Change, Hurricane-Impacted Metropolitan Parishes and Counties, and Residual Parishes and Counties, July 2004 to July 2005 and July 2005 to January 2006*

	Population			July 2004–July 2005 Change		July 2005–January 2006 Change	
Metropolitan Area and County/Parish	**July 2004**	**July 2005**	**January 2006**	**Numeric Change**	**Percent Change**	**Numeric Change**	**Percent Change**
Alabama							
Mobile, AL MSA (1 component)	392,265	393,585	391,251	1,320	0.3	-2,334	-0.6
Mobile (Central City: Mobile)	392,265	393,585	391,251	1,320	0.3	-2,334	-0.6
Tuscaloosa, AL MSA (3)	185,673	187,455	189,483	1,782	1.0	2,028	1.1
Greene	9,619	9,583	9,603	-36	-0.4	20	0.2
Hale	16,837	16,925	17,035	88	0.5	110	0.6
Tuscaloosa (Central City: Tuscaloosa)	159,217	160,947	162,845	1,730	1.1	1,898	1.2
Alabama FEMA County Balance (7)	763,611	768,495	770,217	4,884	0.6	1722	0.2
Louisiana							
Baton Rouge, LA MSA (9)	699,508	705,897	732,624	6,389	0.9	26,727	3.8
Ascension	86,373	89,855	94,128	3,482	4.0	4,273	4.8
East Baton Rouge (Central City: Baton Rouge)	396,882	396,735	413,700	-147	0.0	16,965	4.3
East Feliciana	18,284	18,237	18,503	-47	-0.3	266	1.5
lberville	29,204	29,107	29,729	-97	-0.3	622	2.1
Livingston	105,174	108,622	111,863	3,448	3.3	3,241	3.0
Pointe Coupee	22,107	22,040	22,649	-67	-0.3	609	2.8
St. Helena	10,237	10,187	10,920	-50	-0.5	733	7.2
West Baton Rouge	21,285	21,064	20,836	-221	-1.0	-228	-1.1
West Feliciana	9,962	10,050	10,296	88	0.9	246	2.4
Houma, LA MSA (2)	195,360	196,621	198,444	1,261	0.6	1,823	0.9
Lafourche	90,319	90,543	91,153	224	0.2	610	0.7
Terrebonne (Central City: Houma)	105,041	106,078	107,291	1,037	1.0	1,213	1.1
Lafayette, LA MSA (2)	239,985	242,090	244,931	2,105	0.9	2,841	1.2
St. Martin	49,526	49,642	49,993	116	0.2	351	0.7
Lafayette (Central City: Lafayette)	190,459	192,448	194,938	1,989	1.0	2,490	1.3
Lake Charles, LA MSA (2)	189,456	190,202	182,171	716	0.3	-8,031	-4.2
Calcasieu	179,925	180,709	174,639	784	0.4	-6,070	-3.4
Cameron (Central City: Lake Charles)	9,561	9,493	7,532	-68	-0.7	-1,961	-20.7

Appendix A. Population Change, Hurricane-Impacted Metropolitan Parishes and Counties, and Residual Parishes and Counties, July 2004 to July 2005 and July 2005 to January 2006*—Continued

	Population			July 2004–July 2005 Change		July 2005–January 2006 Change	
Metropolitan Area and County/Parish	**July 2004**	**July 2005**	**January 2006**	**Numeric Change**	**Percent Change**	**Numeric Change**	**Percent Change**
New Orleans, LA MSA (7)	1,291,389	1,292,774	914,745	1,385	0.1	-378,029	-29.2
Jefferson	448,843	448,578	411,305	-265	-0.1	-37,273	-8.3
Orleans (Central City: New Orleans)	443,430	437,186	158,353	-6,244	-1.4	-278,833	-63.8
Plaquemines	28,258	28,282	20,164	24	0.1	-8,118	-28.7
St. Bernard	64,848	64,576	3,361	-272	-0.4	-61,215	-94.8
St. Charles	49,525	50,203	52,269	678	1.4	2,066	4.1
St. John the Baptist	45,087	45,950	48,642	863	1.9	2,692	5.9
St. Tammany	211,398	217,999	220,651	6,601	3.1	2,652	1.2
Louisiana FEMA County Balance (15)	699,347	703,016	712,904	3,669	0.5	9,888	1.4
Mississippi							
Gulfport-Biloxi, MS MSA (3)	244,117	246,674	205,157	2,557	1.0	-41,517	-16.8
Hancock	45,428	46,240	35,129	812	1.8	-11,111	-24.0
Harrison (Central City: Gulfport-Biloxi)	185,178	186,530	155,817	1,352	0.7	-30,713	-16.5
Stone	13,511	13,904	14,211	393	2.9	307	2.2
Hattiesburg, MS MSA (3)	123,881	125,808	126,257	1,927	1.6	449	0.4
Forrest (Central City: Hattiesburg)	68,977	69,608	69,292	631	0.9	-316	-0.5
Lamar	42,777	44,148	45,005	1,371	3.2	857	1.9
Perry	12,127	12,052	11,960	-75	-0.6	-92	-0.8
Jackson MSA, MS (5)	497,868	503,388	505,142	5,520	1.1	1,754	0.3
Copiah	27,844	27,891	28,108	47	0.2	217	0.8
Hinds (Central City: Jackson)	240,384	239,901	238,234	-483	-0.2	-1,667	-0.7
Madison	79,720	82,071	83,800	2,351	2.9	1,729	2.1
Rankin	123,321	126,569	128,045	3,248	2.6	1,476	1.2
Simpson	26,599	26,956	26,955	357	1.3	-1	0.0
Pascagoula, MS MSA (2)	153,095	154,833	147,385	1,738	1.1	-7,448	-4.8
George	20,075	20,584	21,074	509	2.5	490	2.4
Jackson (Central City: Pascagoula)	133,020	134,249	126,311	1,229	0.9	-7,938	-5.9
Mississippi FEMA County Balance (34)	849,755	851,495	855,867	1,740	0.2	4,372	0.5

Appendix A. Population Change, Hurricane-Impacted Metropolitan Parishes and Counties, and Residual Parishes and Counties, July 2004 to July 2005 and July 2005 to January 2006*—Continued

	Population			July 2004–July 2005 Change		July 2005–January 2006 Change	
Metropolitan Area and County/Parish	**July 2004**	**July 2005**	**January 2006**	**Numeric Change**	**Percent Change**	**Numeric Change**	**Percent Change**
Texas							
Beaumont-Port Arthur, TX MSA (3)	365,559	365,838	369,875	279	0.1	4,037	1.1
Jefferson (Central City: Beaumont-Port Arthur)	232,048	231,311	233,620	-737	-0.3	2,309	1.0
Orange	83,738	83,996	85,043	258	0.3	1,047	1.2
Hardin	49,773	50,531	51,212	758	1.5	681	1.3
Houston, TX MSA**	5,041,502	5,144,393	5,274,996	102,891	2.0	130,603	2.5
Brazoria	259,762	267,376	273,012	7,614	2.9	5,636	2.1
Chambers	27,859	28,141	28,439	282	1.0	298	1.1
Fort Bend	435,964	457,225	472,635	21,261	4.9	15,410	3.4
Galveston	267,623	273,162	277,885	5,539	2.1	4,723	1.7
Harris (Central City: Houston)	3,595,720	3,647,656	3,740,480	51,936	1.4	92,824	2.5
Liberty	69,937	70,116	70,458	179	0.3	342	0.5
Montgomery	360,210	376,051	387,278	15,841	4.4	11,227	3.0
San Jacinto	24,427	24,666	24,809	239	1.0	143	0.6
Texas FEMA County Balance (10)	347,949	349,337	351,584	1,388	0.4	2,247	0.6

*Hurricane-impacted areas are those receiving FEMA Assistance on October 7, 2005 for Hurrricane Katrina or October 20, 2005 for Hurricane Rita.

**Only 8 of 10 component counties of the Houston, TX MSA were available in these population estimates; missing are the Texas counties of Austin and Waller

Source: Brookings analysis of U.S. Census Bureau data

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Endnotes

1. Methodological documentation for the regular Population Estimates program is available at www.census.gov/popest/topics/methodology/2005_st_co_meth.html [accessed June 2006].
2. Methodological documentation for the regular American Community survey is available at www.census.gov/acs/www/Downloads/tp67.pdf [accessed June 2006].
3. This population may be comprised of evacuated residents returning to the region as well as the migration of newcomers to the region for the first time.

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