Coastline counties of the United States, located along the country’s saltwater edges, account for just 254 of the nation’s 3,142 counties yet contain 29 percent of its population, 5 of its 10 most populous cities, and 7 of its 10 most populous counties. Bordering the Atlantic and Pacific Oceans and the Gulf of Mexico, these bands of counties provide the setting for an intense concentration of economic and social activity. Shaped by migration, trade, and environmental factors, population trends in coastline counties are distinct from those for the nation as a whole or its noncoastline counties.

This report examines population trends in coastline counties and those counties’ shares of coastline states for the period 1960 to 2008. With counties as a geographic base, the report uses decennial census data from 1960 to 2000 and population estimates for 2000 through 2008 to examine trends in population growth and decline, geographic distribution, and density of the coastline population. One area of interest in recent decades has been the growth of the coastline population in hurricane-prone areas. The last section of the report incorporates historical data on the trajectories of hurricanes striking the U.S. coastlines to broadly gauge the coastline population’s recent experiences with hurricanes.

Since 1991, the U.S. Census Bureau has been publishing population statistics on coastal counties classified as such by the National Oceanic and Atmospheric Administration (NOAA). The NOAA definition provides an environmentally based statistical reporting unit. The coastline county definition applied in this report is based on location, including only those counties that border coastal water or territorial sea.

**POPULATION TRENDS**

The population in coastline counties has grown steadily in recent decades, increasing from 47 million people in 1960 to 87 million people in 2008 (Appendix Table A). During this period, the Pacific coastline region gained the largest number of people (17 million), followed by the Atlantic (15 million) and the Gulf of Mexico (8 million) (Table 1). During the 1960s, 1970s, and 1980s, the Pacific was the largest-gaining coastline region, but, since 1990, the Atlantic region has been the largest numeric gainer. Since 1960, the coastline population has consistently added between 5 million and 10 million people each decade, and its gain has always been smaller than that for noncoastline counties. In the 1980s, the coastline increase of 9.5 million accounted for 43 percent of the country’s total population increase. In the 1990s, however, population growth in coastline counties dropped slightly, to 9.1 million, while growth in
Figure 1.
Coastline Counties of the United States by Coastline Region

Noncoastline counties soared to 23.6 million from 12.7 million in the 1980s. In the 2000 to 2008 period, the coastline gain of 5.3 million people represented just 23 percent of the country’s total population increase of 22.6 million people.

Between 1960 and 2008, the percentage increase in population along the coastline (84 percent) was greater than that of the United States (70 percent) or for noncoastline counties (64 percent).

Among the coastline regions, the percentage increase in population in the Gulf of Mexico (150 percent) and the Pacific (110 percent) far outpaced the gains for the Atlantic region (56 percent), although the Atlantic region added the most new coastline residents in both the 1990s and post-2000 periods.

The Gulf of Mexico, starting from a small population base (5.6 million people in 1960), has maintained consistently higher percentage increases in population than the nation, the overall coastline, and noncoastline counties, with double-digit percentage increases in all periods.

In the decades from 1960 through 1990, the coastline population’s percent increase was higher than those of both the nation and its noncoastline counties. The situation has changed, however, for the post-1990 period, as the growth in coastline counties fell below the growth for the nation and its noncoastline counties. Between 2000 and 2008, noncoastline counties grew by 9 percent, compared to a 7 percent gain for coastline counties.

COASTLINE COUNTIES DEFINED

To qualify as coastline, a county has to be adjacent to water classified as either coastal water or territorial sea. The Census Bureau’s Topologically Integrated Geographic Encoding and Referencing (TIGER®) system lists four types of water: inland water, coastal water, territorial sea, and Great Lakes (U.S. Census Bureau, 1994). Coastal water and territorial sea include portions of the oceans, the Gulf of Mexico, the Caribbean Sea, and the Bering Sea, but do not include the Great Lakes. Therefore, for the purposes of this report, counties along the Great Lakes are not classified as coastline counties. If a county’s inclusion was in question, the 2009 Area Hydrography TIGER® file was referenced. If the county in question is adjacent to water classified as bay, estuary, gulf, sound, ocean, or sea, the county is considered coastline.

There are 254 coastline counties, stretching across parts of 23 states and covering 561,435 square miles. Coastline counties are located in three coastline regions: the Atlantic (129 counties), Gulf of Mexico (56 counties), and Pacific (69 counties) (Figure 1). These regions differ from the four standard census regions (Northeast, Midwest, South, and West).

NOAA COASTAL COUNTIES

NOAA defines a county as coastal if “1) at least 15 percent of [the] county’s total land area is located within the Nation’s coastal watershed; or 2) a portion of or [the] entire county accounts for at least 15 percent of a coastal cataloging unit” (for example, an individual drainage basin) (Wiley, 2003). This definition is well suited for evaluating how human activities occurring inland can affect water- and habitat-quality along the coast. However, most of the counties are not adjacent to a body of saltwater, and these nonadjacent counties are sometimes not perceived as coastal.

NOAA classifies 674 coastal counties among four regions: the Atlantic (283 counties), Gulf of Mexico (144 counties), Pacific (89 counties), and Great Lakes (158 counties). The total population of these counties has grown from 95 million in 1960 to 157 million in 2008, an increase of 67 percent.
### Table 1. Population Change in Coastline and Noncoastline Counties: 1960 to 2008

<table>
<thead>
<tr>
<th>Area</th>
<th>Period</th>
<th>Change, 1960 to 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER (in millions)</td>
<td>23.9</td>
<td>23.3</td>
</tr>
<tr>
<td>Coastline counties</td>
<td>9.3</td>
<td>6.9</td>
</tr>
<tr>
<td>Atlantic</td>
<td>3.8</td>
<td>1.5</td>
</tr>
<tr>
<td>Gulf of Mexico</td>
<td>1.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Pacific</td>
<td>4.1</td>
<td>3.2</td>
</tr>
<tr>
<td>Noncoastline counties</td>
<td>14.6</td>
<td>16.5</td>
</tr>
<tr>
<td>PERCENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>13.3</td>
<td>11.5</td>
</tr>
<tr>
<td>Coastline counties</td>
<td>19.5</td>
<td>12.1</td>
</tr>
<tr>
<td>Atlantic</td>
<td>14.2</td>
<td>4.9</td>
</tr>
<tr>
<td>Gulf of Mexico</td>
<td>24.7</td>
<td>31.9</td>
</tr>
<tr>
<td>Pacific</td>
<td>27.0</td>
<td>16.4</td>
</tr>
<tr>
<td>Noncoastline counties</td>
<td>11.1</td>
<td>11.2</td>
</tr>
</tbody>
</table>

Note: Data for 1960 to 2000 are as of April 1 of each year; data for 2008 are as of July 1.


### Table 2. Share of State Population in Coastline Counties: 1960 to 2008

<table>
<thead>
<tr>
<th>Area</th>
<th>Percentage of state population inside coastline counties</th>
<th>Percentage-point change, 1960 to 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for coastline counties...</td>
<td>49.5</td>
<td>50.6</td>
</tr>
<tr>
<td>Maine</td>
<td>45.4</td>
<td>46.9</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>16.3</td>
<td>18.8</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>50.4</td>
<td>50.3</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Connecticut</td>
<td>62.7</td>
<td>62.1</td>
</tr>
<tr>
<td>New York</td>
<td>62.9</td>
<td>62.2</td>
</tr>
<tr>
<td>New Jersey</td>
<td>54.2</td>
<td>52.3</td>
</tr>
<tr>
<td>Delaware</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Maryland</td>
<td>65.3</td>
<td>58.5</td>
</tr>
<tr>
<td>Virginia</td>
<td>33.4</td>
<td>36.2</td>
</tr>
<tr>
<td>North Carolina</td>
<td>9.7</td>
<td>9.4</td>
</tr>
<tr>
<td>South Carolina</td>
<td>16.9</td>
<td>17.1</td>
</tr>
<tr>
<td>Georgia</td>
<td>6.8</td>
<td>6.1</td>
</tr>
<tr>
<td>Florida</td>
<td>77.5</td>
<td>79.4</td>
</tr>
<tr>
<td>Alabama</td>
<td>11.1</td>
<td>10.9</td>
</tr>
<tr>
<td>Mississippi</td>
<td>8.7</td>
<td>10.8</td>
</tr>
<tr>
<td>Louisiana</td>
<td>36.6</td>
<td>38.0</td>
</tr>
<tr>
<td>Texas</td>
<td>24.1</td>
<td>25.7</td>
</tr>
<tr>
<td>California</td>
<td>78.0</td>
<td>78.4</td>
</tr>
<tr>
<td>Oregon</td>
<td>21.0</td>
<td>20.4</td>
</tr>
<tr>
<td>Washington</td>
<td>62.6</td>
<td>65.9</td>
</tr>
<tr>
<td>Alaska</td>
<td>78.0</td>
<td>81.0</td>
</tr>
<tr>
<td>Hawaii</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note: Data for 1960 to 2000 are as of April 1 of each year; data for 2008 are as of July 1.

Twenty-three states contain coastline counties. The coastline counties’ shares of state population have fluctuated in recent decades (Table 2). Between 1960 and 2008, the coastline share of the population increased in 11 states and declined in 9. (Three states—Rhode Island, Delaware, and Hawaii—have their entire population in coastline counties.) During this period, consistent increases or decreases of the coastline share of population in each state were rare. Some of the largest percentage-point increases were in New England,1 where Maine’s coastline share of its total population increased by 9 percentage points and New Hampshire’s by 6 percentage points. Virginia and Alaska also had increases of more than 5 percentage points. In all 4 of these states, counties adding the most new residents were along the coastline.

In contrast, the population has become less coastline-oriented for other states. For example, the share of Maryland’s population in its coastline counties dropped from 65 percent in 1960 to 52 percent in 2008. Similarly, California’s coastline population-share dropped from 78 percent in 1960 and 1970 to 69 percent in 2008.

With the exception of New Hampshire—whose coastline is relatively short (about 14 miles)—in all states from Maine through Maryland, the 2008 coastline populations exceeded 50 percent. Other states with majority coastline populations were Florida, California, Washington, Alaska, and Hawaii. Nine states had less than 25 percent of their populations in coastline counties, including New Hampshire, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Texas, and Oregon.

Because of regional variation in coastline population growth, the share of the total U.S. coastline population in some states has changed considerably since 1960. Florida, for instance, contained 8 percent of the nation’s coastline population in 1960 and doubled its share to 16 percent by 2008 (Table 3). Virginia, Texas, California, and Washington each gained between 1 and 3 percentage points during the same period. The only state in the Northeast with an increasing share of the total coastline population was New Hampshire, although its gain was less than 1 percentage point. New York had both the largest overall decrease in share, declining 8 percentage points, and the largest decrease in share between each decade. Along the Atlantic region,

1 New England consists of the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

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**INFORMATION TO ASSIST IN INTERPRETING THE MAPS AND TABLES**

The maps and tables in this report were designed to facilitate an understanding of the patterns of change in population and housing along the U.S. coastline. Figure 1 provides an overview of the coastline states and coastline counties classified by region. Places with 2008 populations of 250,000 or more that are largely within coastline counties are also shown. The remaining maps present a closer look at coastline counties by removing most of the country’s interior section and enlarging the coastline regions. Tables with data for coastline regions and portions of coastline states are arranged geographically, starting with states in the Northeast, following the Atlantic coastline southward around the Florida peninsula, westward along the Gulf of Mexico to the tip of Texas, then along the Pacific in California and heading north to Washington. Alaska and Hawaii are included in the Pacific coastline region.

**MEASURING CHANGE IN THE COASTLINE’S RESIDENT POPULATION**

The coastline population trends examined in this report refer to changes in an area’s resident population, which consists of those people usually residing in that particular area (where they live and sleep most of the time). This measure of change in the population does not capture the temporal variations in population that occur in some coastline counties. For example, some areas contain seasonal housing units that are occupied only parts of the year. In addition, some northern coastline areas may swell substantially during the summer months and southern areas during the winter months as thousands of people arrive to vacation there.
Maryland and Georgia had decreasing shares. The population in those two states grew but not as fast as the overall coastline population during the same period. In 1960, Florida’s share of the coastline population was about one-third the size of New York’s. By 2008, Florida’s 16 percent share of the coastline population exceeded New York’s 14 percent share. Other states along the Gulf of Mexico had only small increases in share, with Texas up by 2 percentage points and Mississippi up less than 1 percentage point, or decreases in share (Alabama and Louisiana). While the Pacific’s overall share of coastline population increased between 1960 and 2008 (4 percent), California’s share peaked in 1990, and both Oregon’s and Hawaii’s shares have held steady since 2000. Only Washington and Alaska increased their shares between 2000 and 2008.

Most coastline counties (223 of 254) gained population between 1960 and 2008, and their gains were above the average (70 percent) for all U.S. counties (Figure 2). Along the Atlantic and Gulf of Mexico, counties from the southern coast of North Carolina through Mississippi all experienced population increases during the period. All counties bordering the Pacific coastline from California through Washington gained population during this time as well. Coastline counties that declined in population over the 48 years are located primarily in clusters along the Atlantic from Maine through northern North Carolina, and a few are on the Gulf of Mexico dotting the Louisiana and Texas coastlines.

In several instances, a state that had a decrease in coastline population share can attribute that negative change to population decline in a large city, such as Baltimore in Maryland, and New Orleans in Louisiana. Florida’s increase in share can be attributed to several counties (four along the Atlantic and six along the Gulf) experiencing greater than 500 percent change in population since 1960. Even though Oregon had a slight decrease in share, as noted earlier, all of its coastline counties posted growth between 1960 and 2008. However, the majority of those counties increased at percentages below the national average.
Figure 2.
Change in Coastline Population by County: 1960 to 2008

### Table 4.
Coastline Counties With Largest Numeric and Percentage Population Change: 1960 to 2008

<table>
<thead>
<tr>
<th>County and state</th>
<th>Coastline region</th>
<th>Population</th>
<th>Change, 1960 to 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1960</td>
<td>2008</td>
</tr>
<tr>
<td>Los Angeles County, CA</td>
<td>Pacific</td>
<td>6,038,771</td>
<td>9,862,049</td>
</tr>
<tr>
<td>Harris County, TX</td>
<td>Gulf of Mexico</td>
<td>1,243,158</td>
<td>3,984,349</td>
</tr>
<tr>
<td>Orange County, CA</td>
<td>Pacific</td>
<td>703,925</td>
<td>3,010,759</td>
</tr>
<tr>
<td>San Diego County, CA</td>
<td>Pacific</td>
<td>1,033,011</td>
<td>3,001,072</td>
</tr>
<tr>
<td>Miami-Dade County, FL</td>
<td>Atlantic</td>
<td>935,047</td>
<td>2,398,245</td>
</tr>
<tr>
<td>Broward County, FL</td>
<td>Atlantic</td>
<td>333,946</td>
<td>1,751,234</td>
</tr>
<tr>
<td>Santa Clara County, CA</td>
<td>Pacific</td>
<td>642,315</td>
<td>1,764,499</td>
</tr>
<tr>
<td>Palm Beach County, FL</td>
<td>Atlantic</td>
<td>228,106</td>
<td>1,265,293</td>
</tr>
<tr>
<td>King County, WA</td>
<td>Pacific</td>
<td>935,014</td>
<td>1,875,519</td>
</tr>
<tr>
<td>Suffolk County, NY</td>
<td>Atlantic</td>
<td>666,784</td>
<td>1,512,224</td>
</tr>
<tr>
<td>Hillsborough County, FL</td>
<td>Gulf of Mexico</td>
<td>397,788</td>
<td>1,180,784</td>
</tr>
<tr>
<td>Fairfax County, VA</td>
<td>Atlantic</td>
<td>275,002</td>
<td>1,015,302</td>
</tr>
<tr>
<td>Contra Costa County, CA</td>
<td>Pacific</td>
<td>409,030</td>
<td>1,029,703</td>
</tr>
<tr>
<td>Ventura County, CA</td>
<td>Pacific</td>
<td>199,138</td>
<td>797,740</td>
</tr>
<tr>
<td>Alameda County, CA</td>
<td>Pacific</td>
<td>908,209</td>
<td>1,474,368</td>
</tr>
<tr>
<td>Lee County, FL</td>
<td>Gulf of Mexico</td>
<td>54,539</td>
<td>593,136</td>
</tr>
<tr>
<td>Pinellas County, FL</td>
<td>Gulf of Mexico</td>
<td>374,665</td>
<td>910,260</td>
</tr>
<tr>
<td>Snohomish County, WA</td>
<td>Pacific</td>
<td>172,199</td>
<td>683,655</td>
</tr>
<tr>
<td>Queens County, NY</td>
<td>Atlantic</td>
<td>1,809,578</td>
<td>2,293,007</td>
</tr>
<tr>
<td>Pierce County, WA</td>
<td>Pacific</td>
<td>321,590</td>
<td>785,639</td>
</tr>
</tbody>
</table>

#### PERCENT

<table>
<thead>
<tr>
<th>County and state</th>
<th>Coastline region</th>
<th>Population</th>
<th>Change, 1960 to 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1960</td>
<td>2008</td>
</tr>
<tr>
<td>Collier County, FL</td>
<td>Gulf of Mexico</td>
<td>15,753</td>
<td>315,258</td>
</tr>
<tr>
<td>Flagler County, FL</td>
<td>Atlantic</td>
<td>4,566</td>
<td>91,247</td>
</tr>
<tr>
<td>Matanuska-Susitna Borough, AK</td>
<td>Pacific</td>
<td>5,188</td>
<td>85,458</td>
</tr>
<tr>
<td>Hernando County, FL</td>
<td>Gulf of Mexico</td>
<td>11,205</td>
<td>171,689</td>
</tr>
<tr>
<td>Citrus County, FL</td>
<td>Gulf of Mexico</td>
<td>9,268</td>
<td>141,416</td>
</tr>
<tr>
<td>Pasco County, FL</td>
<td>Gulf of Mexico</td>
<td>36,785</td>
<td>471,028</td>
</tr>
<tr>
<td>Charlotte County, FL</td>
<td>Gulf of Mexico</td>
<td>12,594</td>
<td>150,060</td>
</tr>
<tr>
<td>Lee County, FL</td>
<td>Gulf of Mexico</td>
<td>54,539</td>
<td>593,136</td>
</tr>
<tr>
<td>Kenai Peninsula Borough, AK</td>
<td>Pacific</td>
<td>6,097</td>
<td>59,409</td>
</tr>
<tr>
<td>Martin County, FL</td>
<td>Atlantic</td>
<td>16,932</td>
<td>138,660</td>
</tr>
<tr>
<td>Prince William County, VA</td>
<td>Atlantic</td>
<td>50,164</td>
<td>364,734</td>
</tr>
<tr>
<td>Stafford County, VA</td>
<td>Atlantic</td>
<td>16,876</td>
<td>121,736</td>
</tr>
<tr>
<td>St. Lucie County, FL</td>
<td>Atlantic</td>
<td>39,294</td>
<td>265,108</td>
</tr>
<tr>
<td>St. Johns County, FL</td>
<td>Atlantic</td>
<td>30,034</td>
<td>181,540</td>
</tr>
<tr>
<td>Wakulla County, FL</td>
<td>Gulf of Mexico</td>
<td>5,257</td>
<td>31,089</td>
</tr>
<tr>
<td>St. Tammany Parish, LA</td>
<td>Gulf of Mexico</td>
<td>38,643</td>
<td>228,456</td>
</tr>
<tr>
<td>Dare County, NC</td>
<td>Atlantic</td>
<td>5,935</td>
<td>33,584</td>
</tr>
<tr>
<td>Calvert County, MD</td>
<td>Atlantic</td>
<td>15,826</td>
<td>88,698</td>
</tr>
<tr>
<td>Palm Beach County, FL</td>
<td>Atlantic</td>
<td>228,106</td>
<td>1,265,293</td>
</tr>
<tr>
<td>James City County, VA</td>
<td>Atlantic</td>
<td>11,539</td>
<td>62,414</td>
</tr>
</tbody>
</table>


Los Angeles County, California, had the largest numeric population gain from 1960 to 2008 of any coastline county, growing from 6 million to 9.9 million (Table 4). Seven other coastline counties also gained more than 1 million people over the same 48-year period (Harris County, Texas; Orange County, California; San Diego County, California; Miami-Dade County, Florida; Broward County, Florida; Santa Clara County, California; and Palm Beach County, Florida). Of the 20 largest numeric gainers, 13 were in either California or Florida, 3 were in Washington State, 2 in New York, and 1 each in Texas and Virginia.

The coastline county with the largest percentage increase in population between 1960 and 2008 was Collier County, Florida, at 1,900 percent. Six other coastline counties grew by more than 1,000 percent between 1960 and 2008: Flagler County, Florida; Matanuska-Susitna Borough, Alaska; Hernando County, Florida; Citrus County, Florida; Pasco County, Florida; and Charlotte County, Florida.
In addition, the independent city of Virginia Beach, Virginia (not shown in Table 4), had a population increase of 5,300 percent between 1960 and 2008, reflecting the 1963 consolidation of Princess Anne County (1960 population of 76,100) with Virginia Beach independent city (1960 population of 8,100). Overall, of the 20 largest percentage growers, 12 were in Florida, 3 were in Virginia, 2 were in Alaska, and 1 each in Louisiana, North Carolina, and Maryland.

### Demographic Components of Change

Population growth and decline for counties during a given time can be attributed to several different processes: (1) natural increase (more births than deaths) or natural decrease (more deaths than births); (2) net domestic migration (the difference between immigration from elsewhere in the country and out-migration); and (3) net international migration (movement to and from abroad). This section will examine these demographic components of change for the 2000 to 2008 period for coastline regions and coastline portions of coastline states.

Natural increase was the largest contributor to population change, accounting for 84 percent (4.5 million of 5.3 million) of the total population change along the coastlines between 2000 and 2008 (Table 5). All coastline regions experienced positive natural increase.

Net international migration to coastline counties numbered 3.9 million, but overall net migration...
was offset by net domestic out-migration of 3.5 million, primarily from California and New York. The Atlantic and Gulf of Mexico regions had net immigration, while the Pacific region experienced net outmigration.

Natural increase was the norm for all coastline portions of the 23 coastline states and was a larger contributor to population change than net migration in 15 of those states. Net outmigration occurred along the coastlines of states stretching from Massachusetts through New Jersey as well as Mississippi, Louisiana, California, and Alaska. Coastline Florida’s total net migration (1.4 million) accounted for 85 percent of its coastline growth and was at least 1.1 million people higher than total net migration in all other portions of coastline states. The coastline section of North Carolina was the only section to have negative net international migration, reflecting movement overseas of Armed Forces based in Onslow County (location of Marine Corps Air Station New River and Marine Corps Base Camp Lejeune).

Figure 3.
**Population Density for Coastline Counties: 1960 to 2008**
(Average number of people per square mile of land area)

Note: Data for 1960 to 2000 are as of April 1 of each year; data for 2008 are as of July 1.
POPULATION DENSITY

Population density is the measurement of the number of people in an area, frequently expressed as the average number of people per square mile. Excluding Alaska, whose sizable coastline area (over 10 times as large as any other state coastline portion and accounting for 70 percent of the total U.S. coastline land area) heavily affects national density statistics, the average density of coastline counties was 260 people per square mile in 1960 and increased steadily each decade to 480 people per square mile in 2008 (Figure 3). Including Alaska, the population density shows a less dramatic increase, growing from 77 people per square mile in 1960 to 156 people per square mile in 2008.

Coastline counties, which are many of the country’s densest counties, are, on average, twice as dense as noncoastline counties (Table 6). Among the coastline states, only the coastline sections of New York, between 1970 and 1980, Louisiana, between 1980 and 1990 and between 2000 and 2008, and Mississippi between 2000 and 2008 had decreases in population density.

Coastline sections of northeastern states are by far the densest. In 2008, of the 7 northeastern coastline states, 4 (Massachusetts, Rhode Island, New York, and New Jersey) had a coastline population density above 1,000 people per square mile, and Connecticut’s coastline population density was close behind, at 959 people per square mile. These five states also had the five densest coastline portions of all coastline states.

The 4 densest coastline counties—New York (Manhattan), Kings (Brooklyn), Bronx, and Queens—constitute 4 of New York City’s 5 boroughs (Table 7). The fifth borough, Staten Island (Richmond County), more than doubled in density between 1960 and 2008, and moved from sixteenth to eighth densest in that time. Furthermore, in both 1960 and 2008, 10 of

Table 6.
Population Density for Coastline Counties by State: 1960 to 2008
(Average number of people per square mile of land area)

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>United States</td>
<td>50.5</td>
<td>57.5</td>
<td>64.2</td>
<td>70.5</td>
<td>79.7</td>
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<td>35.6</td>
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<tr>
<td>Coastline counties</td>
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<td>95.8</td>
<td>113.7</td>
<td>130.2</td>
<td>146.3</td>
<td>155.7</td>
<td>78.3</td>
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<tr>
<td>Maine</td>
<td>56.5</td>
<td>59.8</td>
<td>70.5</td>
<td>80.1</td>
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<td>91.7</td>
<td>35.2</td>
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<td>New Hampshire</td>
<td>142.6</td>
<td>200.0</td>
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<td>353.9</td>
<td>399.3</td>
<td>428.0</td>
<td>285.5</td>
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<td>Massachusetts</td>
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<td>1,059.5</td>
<td>1,085.5</td>
<td>1,146.0</td>
<td>1,228.1</td>
<td>1,264.0</td>
<td>302.7</td>
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<td>Rhode Island</td>
<td>831.4</td>
<td>915.8</td>
<td>916.2</td>
<td>970.6</td>
<td>1,014.0</td>
<td>1,016.4</td>
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<tr>
<td>Connecticut</td>
<td>701.9</td>
<td>832.0</td>
<td>855.4</td>
<td>897.0</td>
<td>937.1</td>
<td>959.0</td>
<td>257.1</td>
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<tr>
<td>New York</td>
<td>5,469.2</td>
<td>5,875.4</td>
<td>5,462.1</td>
<td>5,123.3</td>
<td>5,123.6</td>
<td>5,136.5</td>
<td>360.0</td>
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<tr>
<td>New Jersey</td>
<td>995.6</td>
<td>1,134.9</td>
<td>1,159.4</td>
<td>1,212.3</td>
<td>1,321.6</td>
<td>1,356.5</td>
<td>360.0</td>
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<td>Delaware</td>
<td>229.0</td>
<td>281.2</td>
<td>304.9</td>
<td>341.8</td>
<td>402.0</td>
<td>447.9</td>
<td>219.0</td>
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<td>Maryland</td>
<td>366.8</td>
<td>415.3</td>
<td>434.4</td>
<td>467.5</td>
<td>499.8</td>
<td>527.0</td>
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<td>Virginia</td>
<td>248.3</td>
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<td>498.7</td>
<td>566.9</td>
<td>611.6</td>
<td>363.3</td>
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<tr>
<td>North Carolina</td>
<td>51.2</td>
<td>55.3</td>
<td>65.3</td>
<td>78.7</td>
<td>91.9</td>
<td>105.3</td>
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<td>South Carolina</td>
<td>78.4</td>
<td>85.8</td>
<td>103.4</td>
<td>120.8</td>
<td>144.2</td>
<td>170.5</td>
<td>92.1</td>
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<tr>
<td>Georgia</td>
<td>95.3</td>
<td>100.2</td>
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<td>156.5</td>
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<td>181.4</td>
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<td>413.6</td>
<td>467.0</td>
<td>337.9</td>
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<td>133.6</td>
<td>157.3</td>
<td>169.2</td>
<td>191.6</td>
<td>206.0</td>
<td>77.1</td>
</tr>
<tr>
<td>Mississippi</td>
<td>106.8</td>
<td>135.5</td>
<td>169.6</td>
<td>176.4</td>
<td>205.6</td>
<td>197.3</td>
<td>90.5</td>
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<tr>
<td>Louisiana</td>
<td>142.7</td>
<td>165.9</td>
<td>187.8</td>
<td>185.6</td>
<td>192.8</td>
<td>170.7</td>
<td>28.0</td>
</tr>
<tr>
<td>Texas</td>
<td>157.8</td>
<td>197.4</td>
<td>259.8</td>
<td>295.4</td>
<td>351.0</td>
<td>402.0</td>
<td>244.2</td>
</tr>
<tr>
<td>California</td>
<td>351.2</td>
<td>448.4</td>
<td>516.1</td>
<td>623.3</td>
<td>691.7</td>
<td>721.1</td>
<td>369.9</td>
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<td>Oregon</td>
<td>23.6</td>
<td>27.1</td>
<td>34.3</td>
<td>35.0</td>
<td>38.9</td>
<td>40.9</td>
<td>17.3</td>
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<tr>
<td>Washington</td>
<td>98.8</td>
<td>124.2</td>
<td>146.5</td>
<td>178.5</td>
<td>213.6</td>
<td>235.1</td>
<td>136.3</td>
</tr>
<tr>
<td>Alaska</td>
<td>0.4</td>
<td>0.6</td>
<td>0.9</td>
<td>1.2</td>
<td>1.4</td>
<td>1.5</td>
<td>1.1</td>
</tr>
<tr>
<td>Hawaii</td>
<td>98.4</td>
<td>119.6</td>
<td>150.1</td>
<td>172.4</td>
<td>188.5</td>
<td>200.4</td>
<td>102.0</td>
</tr>
</tbody>
</table>

Note: Data for 1960 to 2000 are as of April 1 of each year; data for 2008 are as of July 1.

the 20 densest coastline counties were part of the current New York metropolitan statistical area (metro area). The only Pacific county on the “Top 20” list in 1960 was San Francisco County, California, which is the second smallest county in land area in the Pacific region (behind Kalawao County, Hawaii) and coextensive with the city of San Francisco. Other counties containing large cities on the list in 1960 included Suffolk County, Massachusetts (Boston); Baltimore city, Maryland; and Orleans Parish, Louisiana (New Orleans). The other 6 counties rounding out the Top 20 in 1960 were small independent cities of Virginia.

Aside from some shifts in rankings, differences in the list of densest coastline counties in 1960 and 2008 include the addition of Orange County, California, and Pinellas County, Florida, while Orleans Parish, Louisiana, and Orleans Parish, New York, dropped off the list. Given these changes, the Atlantic region retained 17 of the 20 densest counties (compared to 18 in 1960), while the Pacific had 2, and the Gulf of Mexico had 1. Between 1960 and 2008, some of the densest counties (New York County, New York; Kings County, New York; and Bronx County, New York) decreased somewhat in density, while the threshold for making the Top 20 increased from 1,660 to over 2,500 people per square mile.

Reflecting well-known trends in post-World War II suburbanization and central city population decline, some of the densest counties of the Atlantic region decreased in population density between 1960 and 2008 while counties in close proximity to those dense counties increased in population density. For example, counties surrounding Suffolk, Massachusetts (Boston), Baltimore city, Maryland, and Washington, DC, all saw increases of more than 250 people per square mile (Figure 4). In the southern Atlantic, Gulf of Mexico, and Pacific, counties both surrounding and containing large cities such as Jacksonville, Miami, Tampa, Houston, San Diego, Los Angeles, San Francisco, Seattle, and Honolulu had large increases in population density. This increasing density has contributed to an increase in the size of core urban areas and, as a result, an increase in the number of metro area counties along the coast.

Table 7. **Coastline Counties by Highest Population Density: 1960 and 2008**

(Average number of people per square mile of land area)

<table>
<thead>
<tr>
<th>County and state</th>
<th>Coastline region</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York County, NY</td>
<td>Atlantic</td>
<td>74,551.4</td>
</tr>
<tr>
<td>Kings County, NY</td>
<td>Atlantic</td>
<td>37,103.8</td>
</tr>
<tr>
<td>Bronx County, NY</td>
<td>Atlantic</td>
<td>33,843.6</td>
</tr>
<tr>
<td>Queens County, NY</td>
<td>Atlantic</td>
<td>16,554.6</td>
</tr>
<tr>
<td>San Francisco County, CA</td>
<td>Pacific</td>
<td>15,795.1</td>
</tr>
<tr>
<td>Suffolk County, MA</td>
<td>Atlantic</td>
<td>13,615.4</td>
</tr>
<tr>
<td>Hudson County, NJ</td>
<td>Atlantic</td>
<td>13,219.4</td>
</tr>
<tr>
<td>Baltimore city, MD</td>
<td>Atlantic</td>
<td>11,600.0</td>
</tr>
<tr>
<td>Essex County, NJ</td>
<td>Atlantic</td>
<td>7,317.5</td>
</tr>
<tr>
<td>Portsmouth city, VA</td>
<td>Atlantic</td>
<td>6,376.3</td>
</tr>
<tr>
<td>Suffolk city, VA</td>
<td>Atlantic</td>
<td>6,304.5</td>
</tr>
<tr>
<td>Norfolk city, VA</td>
<td>Atlantic</td>
<td>5,650.7</td>
</tr>
<tr>
<td>Union County, NJ</td>
<td>Atlantic</td>
<td>4,902.3</td>
</tr>
<tr>
<td>Nassau County, NY</td>
<td>Atlantic</td>
<td>4,569.2</td>
</tr>
<tr>
<td>Virginia Beach city, VA</td>
<td>Atlantic</td>
<td>4,045.5</td>
</tr>
<tr>
<td>Richmond County, NY</td>
<td>Atlantic</td>
<td>3,803.2</td>
</tr>
<tr>
<td>Orleans Parish, LA</td>
<td>Gulf of Mexico</td>
<td>3,704.0</td>
</tr>
<tr>
<td>Westchester County, NY</td>
<td>Atlantic</td>
<td>1,878.9</td>
</tr>
<tr>
<td>Hampton city, VA</td>
<td>Atlantic</td>
<td>1,736.2</td>
</tr>
<tr>
<td>Newport News city, VA</td>
<td>Atlantic</td>
<td>1,662.9</td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York County, NY</td>
<td>Atlantic</td>
<td>71,764.5</td>
</tr>
<tr>
<td>Kings County, NY</td>
<td>Atlantic</td>
<td>36,105.0</td>
</tr>
<tr>
<td>Bronx County, NY</td>
<td>Atlantic</td>
<td>33,061.8</td>
</tr>
<tr>
<td>Queens County, NY</td>
<td>Atlantic</td>
<td>20,977.1</td>
</tr>
<tr>
<td>San Francisco County, CA</td>
<td>Pacific</td>
<td>17,260.0</td>
</tr>
<tr>
<td>Hudson County, NJ</td>
<td>Atlantic</td>
<td>12,887.9</td>
</tr>
<tr>
<td>Suffolk County, MA</td>
<td>Atlantic</td>
<td>12,606.4</td>
</tr>
<tr>
<td>Richmond County, NY</td>
<td>Atlantic</td>
<td>8,350.3</td>
</tr>
<tr>
<td>Baltimore city, MD</td>
<td>Atlantic</td>
<td>7,888.1</td>
</tr>
<tr>
<td>Essex County, NJ</td>
<td>Atlantic</td>
<td>6,106.3</td>
</tr>
<tr>
<td>Union County, NJ</td>
<td>Atlantic</td>
<td>5,087.0</td>
</tr>
<tr>
<td>Nassau County, NY</td>
<td>Atlantic</td>
<td>4,750.0</td>
</tr>
<tr>
<td>Norfolk city, VA</td>
<td>Atlantic</td>
<td>4,327.0</td>
</tr>
<tr>
<td>Orange County, CA</td>
<td>Gulf of Mexico</td>
<td>3,324.4</td>
</tr>
<tr>
<td>Pinellas County, FL</td>
<td>Atlantic</td>
<td>2,988.0</td>
</tr>
<tr>
<td>Portsmouth city, VA</td>
<td>Atlantic</td>
<td>2,830.1</td>
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<td>Hampton city, VA</td>
<td>Atlantic</td>
<td>2,627.9</td>
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<tr>
<td>Newport News city, VA</td>
<td>Atlantic</td>
<td>2,597.6</td>
</tr>
<tr>
<td>Middlesex County, NJ</td>
<td>Atlantic</td>
<td>2,554.7</td>
</tr>
</tbody>
</table>

Figure 4. Change in Population Density for Coastline Counties: 1960 to 2008

The 1960 coastline population was predominantly metropolitan, with 87 percent of coastline residents living in metro area counties (Table 8). But most counties of the coastlines were not in standard metropolitan statistical areas. For example, along the Atlantic and Gulf of Mexico, except for a swath of counties from New Hampshire through northern New Jersey, only a handful of counties were metropolitan (Figure 5). No coastline counties in North Carolina or Mississippi were metropolitan at that time. The Pacific coastline was similar, with large portions of counties outside metro areas and no metro area counties in Alaska. However, in 2008, metro and micro area counties present almost unbroken bands along the country’s coastline perimeter. This transition came about as all coastline counties that were metropolitan in 1960 continued to be so in 2008, and new metro area counties began filling in most of the space between the older metro area counties. In addition to metro areas, there are now micro areas, introduced in 2003, accounting for a number of counties that do not belong to metro areas. In Figure 5, these bands of metro and micro area counties are especially noticeable from southern Maine through northern Virginia; from the outer banks of North Carolina around the peninsula of Florida; from the Florida panhandle to the southern tip of Texas; and from southern California to the middle of the Oregon coast.

This increase in the number of coastline counties in metro areas reflects increased county population and population density as well as social and economic integration among those counties. In 1960, 87 percent of the coastline population was predominantly metropolitan, with 87 percent of coastline residents living in metro area counties (Table 8). But most counties of the coastlines were not in standard metropolitan statistical areas. For example, along the Atlantic and Gulf of Mexico, except for a swath of counties from New Hampshire through northern New Jersey, only a handful of counties were metropolitan (Figure 5). No coastline counties in North Carolina or Mississippi were metropolitan at that time. The Pacific coastline was similar, with large portions of counties outside metro areas and no metro area counties in Alaska. However, in 2008, metro and micro area counties present almost unbroken bands along the country’s coastline perimeter. This transition came about as all coastline counties that were metropolitan in 1960 continued to be so in 2008, and new metro area counties began filling in most of the space between the older metro area counties. In addition to metro areas, there are now micro areas, introduced in 2003, accounting for a number of counties that do not belong to metro areas. In Figure 5, these bands of metro and micro area counties are especially noticeable from southern Maine through northern Virginia; from the outer banks of North Carolina around the peninsula of Florida; from the Florida panhandle to the southern tip of Texas; and from southern California to the middle of the Oregon coast.

This increase in the number of coastline counties in metro areas reflects increased county population and population density as well as social and economic integration among those counties. In 1960, 87 percent of the coastline

### Table 8. Coastline Population by Metropolitan Area Status: 1960 and 2008

<table>
<thead>
<tr>
<th>Area</th>
<th>Number (in millions)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>179.3</td>
<td>304.1</td>
</tr>
<tr>
<td>Inside metro area</td>
<td>114.4</td>
<td>254.2</td>
</tr>
<tr>
<td>Outside metro area</td>
<td>64.9</td>
<td>49.9</td>
</tr>
<tr>
<td>Coastline counties</td>
<td>47.4</td>
<td>87.4</td>
</tr>
<tr>
<td>Inside metro area</td>
<td>41.0</td>
<td>83.6</td>
</tr>
<tr>
<td>Outside metro area</td>
<td>6.4</td>
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</tr>
<tr>
<td>Noncoastline counties</td>
<td>131.9</td>
<td>216.6</td>
</tr>
<tr>
<td>Inside metro area</td>
<td>73.3</td>
<td>170.6</td>
</tr>
<tr>
<td>Outside metro area</td>
<td>58.5</td>
<td>46.1</td>
</tr>
</tbody>
</table>

Note: Standard metropolitan statistical areas defined by the U.S. Bureau of the Budget as of November 1960. Metropolitan statistical areas defined by the U.S. Office of Management and Budget (OMB) as of November 2007. For the 2008 data, the “outside metro area” category includes both micro areas and territory outside of metro and micro areas defined by OMB as of November 2007.

Source: U.S. Census Bureau.

### Statistical Area Definitions

Standard definitions of metropolitan areas were first issued by the U.S. Bureau of the Budget (predecessor of the U.S. Office of Management and Budget [OMB]), under the designation “standard metropolitan area” (SMA), for use in the 1950 census. From that time forward, OMB (or its predecessor) has reviewed the statistical area standards and, if called for, modified them in the period preceding their application to new Census Bureau decennial data. The term was changed to “standard metropolitan statistical area” (SMSA) in the standards developed for the 1960 census. The 2000 OMB standards provide for metropolitan and micropolitan statistical areas (metro and micro areas), collectively referred to as “core based statistical areas” (CBSAs). These geographic entities are defined for use by federal statistical agencies in collecting, tabulating, and publishing federal statistics. A metro area contains a core urban area population of 50,000 or more. A micro area contains a core urban area population of at least 10,000 (but less than 50,000). Each metro or micro area consists of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban area. A metro or micro area’s geographic delineation, or list of geographic components at a particular point in time, is referred to as its definition. During the period examined in this report, there have been modifications in statistical area definitions, such as the qualification of new metro areas, changes to the definitions of some existing metro areas, and since the application of the 2000 OMB standards to Census 2000 data, the qualification of micro areas. This report uses two sets of statistical area definitions. For 1960, SMSAs are as defined by the Bureau of the Budget as of November 1960; and, for 2008, CBSAs are as defined by OMB as of November 2007.
Figure 5. **Standard Metropolitan Statistical Area and Core Based Statistical Area Status for Coastline Counties: 1960 and 2008**

Note: Metro in 1960 refers to standard metropolitan statistical areas; metro and micro in 2008 refers to core based statistical areas. Standard metropolitan statistical areas for 1960 are defined by the U.S. Bureau of the Budget as of November 1960. Core based statistical areas for 2008 are defined by the U.S. Office of Management and Budget as of November 2007.
population was metropolitan, compared to 64 percent for the nation and 56 percent for noncoastline counties. In 2008, the percentage of the coastline county population that belonged to a metro area increased to 96 percent, compared to 84 percent for the nation and 79 percent for the nation's noncoastline counties. When including the population of micro areas, the total percentage in core based statistical areas in 2008 stood at 99 percent for coastline counties, compared to 94 percent for the country and 92 percent for noncoastline counties (Appendix Table B).

**HOUSING TRENDS**

The number of housing units along the coastline increased in recent decades, from 16.1 million in 1960 to 36.3 million in 2008 (Appendix Table C). During this period, the Atlantic coastline region gained the largest number of housing units (8.8 million), followed by the Pacific (6.8 million) and the Gulf of Mexico (4.5 million) (Table 9). During the 1960s, the Atlantic and Pacific each gained 1.5 million housing units, but since 1970, the Atlantic region has been the largest numeric gainer. Since 1960, coastline counties have consistently added at least 3 million housing units each decade—with a peak increase in the 1970s of 5.7 million—and their gain has always been smaller than that for noncoastline counties.

Between 1960 and 2008, the percentage increase in housing units along the coastline (126 percent) was greater than that of the United States (121 percent) or for noncoastline counties (120 percent). Among the coastline regions, the total percentage increases in the Gulf of Mexico (246 percent) and the Pacific (130 percent) far outpaced the gains for the Atlantic region (98 percent). Housing unit growth along the Gulf of Mexico soared to just under 60 percent in the 1970s and consistently maintained higher percentage increases in housing units than the nation, the overall coastline, and noncoastline counties (except in the 1990s), with double-digit percentage increases in all periods.

In each of the 23 states with coastline counties, the coastline counties’ share of the state’s housing units has fluctuated in recent decades, from a high of 52 percent in 1970 to a low of 48 percent in 2008 (Table 10). Between 1960 and 2008, the U.S. coastline share of housing units increased in 11 states and declined in 9. Some of the largest percentage-point increases were along the Atlantic, where Maine’s and New Hampshire’s coastline shares of their total housing units increased by 4 percentage points. Virginia’s share increased by 5 percentage points, and South Carolina’s by 6 percentage points.

<table>
<thead>
<tr>
<th>Area</th>
<th>Period</th>
<th>Change, 1960 to 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NUMBER (in millions)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>10.4</td>
<td>19.7</td>
</tr>
<tr>
<td>Coastline counties</td>
<td>3.6</td>
<td>5.7</td>
</tr>
<tr>
<td>Atlantic</td>
<td>1.5</td>
<td>2.2</td>
</tr>
<tr>
<td>Gulf of Mexico</td>
<td>0.6</td>
<td>1.4</td>
</tr>
<tr>
<td>Pacific</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Noncoastline counties</td>
<td>6.8</td>
<td>14.1</td>
</tr>
<tr>
<td><strong>PERCENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>17.7</td>
<td>28.7</td>
</tr>
<tr>
<td>Coastline counties</td>
<td>22.3</td>
<td>28.8</td>
</tr>
<tr>
<td>Atlantic</td>
<td>16.9</td>
<td>21.2</td>
</tr>
<tr>
<td>Gulf of Mexico</td>
<td>30.5</td>
<td>58.9</td>
</tr>
<tr>
<td>Pacific</td>
<td>28.5</td>
<td>29.9</td>
</tr>
<tr>
<td>Noncoastline counties</td>
<td>16.0</td>
<td>28.7</td>
</tr>
</tbody>
</table>

Note: Data for 1960 to 2000 are as of April 1 of each year; data for 2008 are as of July 1.

Table 10.  
**Share of Coastline County Housing Units by State: 1960 to 2008**

<table>
<thead>
<tr>
<th>Area</th>
<th>Percentage of state housing units inside coastline counties</th>
<th>Percentage-point change, 1960 to 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastline state total</td>
<td>51.3</td>
<td>51.7</td>
</tr>
<tr>
<td>Maine</td>
<td>50.9</td>
<td>50.7</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>17.4</td>
<td>18.9</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>53.3</td>
<td>52.6</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Connecticut</td>
<td>63.1</td>
<td>62.1</td>
</tr>
<tr>
<td>New York</td>
<td>63.3</td>
<td>62.9</td>
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<tr>
<td>New Jersey</td>
<td>56.9</td>
<td>55.2</td>
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<tr>
<td>Delaware</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Maryland</td>
<td>66.5</td>
<td>59.5</td>
</tr>
<tr>
<td>Virginia</td>
<td>32.6</td>
<td>34.1</td>
</tr>
<tr>
<td>North Carolina</td>
<td>9.9</td>
<td>9.9</td>
</tr>
<tr>
<td>South Carolina</td>
<td>17.4</td>
<td>17.6</td>
</tr>
<tr>
<td>Georgia</td>
<td>7.1</td>
<td>6.2</td>
</tr>
<tr>
<td>Florida</td>
<td>79.5</td>
<td>80.9</td>
</tr>
<tr>
<td>Alabama</td>
<td>11.2</td>
<td>10.8</td>
</tr>
<tr>
<td>Mississippi</td>
<td>9.2</td>
<td>10.9</td>
</tr>
<tr>
<td>Louisiana</td>
<td>37.3</td>
<td>38.5</td>
</tr>
<tr>
<td>Texas</td>
<td>23.7</td>
<td>25.2</td>
</tr>
<tr>
<td>California</td>
<td>77.8</td>
<td>78.3</td>
</tr>
<tr>
<td>Oregon</td>
<td>20.6</td>
<td>20.4</td>
</tr>
<tr>
<td>Washington</td>
<td>63.2</td>
<td>66.1</td>
</tr>
<tr>
<td>Alaska</td>
<td>78.6</td>
<td>82.9</td>
</tr>
<tr>
<td>Hawaii</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note: Data for 1960 to 2000 are as of April 1 of each year; data for 2008 are as of July 1.

COASTLINE COUNTIES AND HURRICANES

Coastline counties along the Atlantic and Gulf of Mexico coasts as well as the Hawaiian Islands account for nearly two-thirds of the nation’s coastline population and are home to 4 of the nation’s 10 most populous counties. These counties are also vulnerable to one of nature’s biggest threats: hurricanes. The following section utilizes data from NOAA to examine how hurricanes have affected the coastline population from 1960 to 2008.

The hurricane data for this section come from NOAA’s Coastal Services Center, Historical Hurricane Tracks Web site (NOAA, 2009). Storm track data for both basins (Atlantic and Pacific) were restricted to include only tracks for hurricanes (Categories 1 through 5) that occurred during or after 1960. The hurricane paths were then superimposed onto a map of U.S. counties, and a radius was applied to each path to simulate an area each hurricane may have affected (Appendix Figure A). Coastline counties were regarded as experiencing a direct hit if they were within or crossed by the boundary of the simulated area. Based on these data, between 1960 and 2008, the total number of hurricanes affecting coastline counties was 86.

Sections of the North Carolina, Florida, Alabama, and Louisiana coastlines have experienced the most hurricanes since 1960 (Figure 6). North Carolina, though farther north than Louisiana and Florida, is especially susceptible to hurricanes due to its barrier islands that extend east into the Atlantic Ocean. In contrast, coastline counties of all northeastern states, as well as Delaware, Maryland, Virginia, Georgia, and Hawaii experienced relatively few hurricanes, with only Suffolk County, New York, and Nantucket County, Massachusetts, experiencing more than three hurricanes between 1960 and 2008. This pattern is attributable in part to Georgia’s small coastline and the curvature of the U.S. coastline, which situates Georgia farther to the west than the coastlines of Florida and North Carolina. Coastline counties north of North Carolina also have two natural buffers against hurricanes. First, a hurricane will most likely have already made landfall before reaching these counties, and second, a hurricane that has not made landfall will have traveled over the cooler waters north of Florida, thus potentially reducing the hurricane to a tropical storm.

WHAT IS A HURRICANE?

A type of tropical cyclone, a hurricane is an “intense tropical weather system of strong thunderstorms with a well-defined surface circulation and maximum sustained winds of 74 mph...or higher” (NOAA, 1999). Hurricanes form in both the Atlantic and the northeast Pacific basins. The term “hurricane” was derived from the Spanish and Caribbean Indian words for evil spirits and big winds (NOAA, 1999).

The Saffir-Simpson Hurricane Scale defines hurricane strength by categories, with Category 1 storms the weakest (74–95 mph) and Category 5 the strongest (winds greater than 155 mph). The category of the storm is not directly related to the damage the storm may cause (NOAA, 1999). “Frequently, the right side of a hurricane is the most dangerous in terms of storm surge, winds, and tornadoes” (NOAA, 1999).

Hurricanes in the northeast Pacific almost never hit the U.S. coastline because hurricanes tend to move in a west-northwest direction after forming. In the Atlantic, this motion often brings hurricanes to Atlantic and Gulf of Mexico coastline counties. In the northeast Pacific, a west-northwest track pushes hurricanes farther offshore, away from continental Pacific coastline counties. Also, along the country’s west coast, ocean temperatures rarely get above the lower 70s. These cool temperatures are not warm enough to sustain a hurricane’s strength (Landsea, 2007).
Figure 6. 
Number of Hurricanes by Coastline County: 1960 to 2008

Note: There were no hurricanes for Alaska, California, Oregon, or Washington coastline counties.

Source: NOAA Coastal Services Center, Historical Hurricane Tracks: 1851 to 2008.
Of the coastline counties most frequently hit by hurricanes, only one, Hyde County, North Carolina, had an overall decrease in population between 1960 and 2008 (Table 11). Furthermore, only one, St. Bernard Parish, Louisiana, experienced an overall decrease in housing units between 1960 and 2008. On average, the 11 coastline counties that were hit by 11 or more hurricanes between 1960 and 2008 increased in population by nearly 179 percent and had a housing unit increase of 255 percent.

Closer examination reveals that these 11 counties did not grow consistently throughout the 48-year period. Between 2000 and 2008, 5 of the 11 counties decreased in population due largely to net out-migration (more people moving out of, rather than into, these 5 counties during that time). All 5 counties were hit by some of the most intense hurricanes since 1960.2

The 10 most intense hurricanes since 1960 affected nearly 51 million people living in coastline counties. If those same 10 hurricanes had struck in 2008, the coastline population affected would have been closer to 70 million.

Coastline counties hit by Hurricane Donna (1960) have seen the greatest population growth (116 percent) from the time the area was hit (Figure 7). Florida’s coastline counties affected by Hurricane Donna were some of the nation’s fastest-growing counties between 1960 and 2008. Coastline counties affected by Hurricane Carla (1961) may not have seen the most dramatic increase in numeric growth between 1960 and 2008, but this collection of counties grew by 90 percent, nearly doubling in population from 464,000 in 1960 to 882,000 in 2008.

Hurricane Gloria (1985) affected the largest population (17 million) at the time it struck. This large population included residents of New York City’s five boroughs; Boston, Massachusetts; Bridgeport, Connecticut; New Haven, Connecticut; and Providence, Rhode Island. The population affected by Hurricane Gloria in 1985 was larger than that of Hurricane Donna in 1960 (11 million), but by 2008, the population of Hurricane Donna’s affected area (24 million) surpassed that of Hurricane Gloria (19 million).

Of the 10 most intense hurricanes between 1960 and 2006, only the coastline counties affected by Hurricane Katrina (2005) had an overall decrease in population (nearly 2 percent loss). The populations in coastline counties affected by Hurricanes Andrew (1992) and Opal (1995) have each grown by more than 20 percent in the decades since they hit. In contrast, even though Hurricane Rita (2005) occurred after Hurricane Katrina, the population in coastline counties affected by Hurricane Rita has grown slightly since 2005 (1 percent growth). However, 3 of the 6 coastline counties hit by Hurricane Rita had a lower population in 2008 than in 2005.

Table 11. Coastline Counties Most Frequently Hit by Hurricanes: 1960 to 2008

<table>
<thead>
<tr>
<th>Rank</th>
<th>County and state</th>
<th>Coastline region</th>
<th>Number of hurricanes</th>
<th>Percent change in population 1960 to 2008</th>
<th>Percent change in population 2000 to 2008</th>
<th>Percent change in housing units 1960 to 2008</th>
<th>Percent change in housing units 2000 to 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Monroe County, FL</td>
<td>Gulf of Mexico</td>
<td>15</td>
<td>50.8</td>
<td>–9.2</td>
<td>221.8</td>
<td>4.3</td>
</tr>
<tr>
<td>2</td>
<td>Lafourche Parish, LA</td>
<td>Gulf of Mexico</td>
<td>14</td>
<td>67.2</td>
<td>2.9</td>
<td>151.5</td>
<td>8.9</td>
</tr>
<tr>
<td>3</td>
<td>Carteret County, NC</td>
<td>Atlantic</td>
<td>14</td>
<td>104.3</td>
<td>6.4</td>
<td>366.4</td>
<td>12.4</td>
</tr>
<tr>
<td>4</td>
<td>Dare County, NC</td>
<td>Atlantic</td>
<td>13</td>
<td>465.9</td>
<td>12.1</td>
<td>709.6</td>
<td>22.8</td>
</tr>
<tr>
<td>4</td>
<td>Hyde County, NC</td>
<td>Atlantic</td>
<td>13</td>
<td>–10.1</td>
<td>–11.1</td>
<td>83.7</td>
<td>5.8</td>
</tr>
<tr>
<td>6</td>
<td>Jefferson Parish, LA</td>
<td>Gulf of Mexico</td>
<td>12</td>
<td>108.9</td>
<td>–4.2</td>
<td>201.4</td>
<td>–3.5</td>
</tr>
<tr>
<td>6</td>
<td>Palm Beach County, FL</td>
<td>Atlantic</td>
<td>12</td>
<td>454.7</td>
<td>11.9</td>
<td>616.9</td>
<td>15.2</td>
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<tr>
<td>8</td>
<td>Miami-Dade County, FL</td>
<td>Atlantic</td>
<td>11</td>
<td>156.5</td>
<td>6.4</td>
<td>180.6</td>
<td>14.9</td>
</tr>
<tr>
<td>8</td>
<td>St. Bernard Parish, LA</td>
<td>Gulf of Mexico</td>
<td>11</td>
<td>17.2</td>
<td>–43.9</td>
<td>–2.6</td>
<td>–67.9</td>
</tr>
<tr>
<td>8</td>
<td>Cameron Parish, LA</td>
<td>Gulf of Mexico</td>
<td>11</td>
<td>4.8</td>
<td>–27.6</td>
<td>87.7</td>
<td>–8.1</td>
</tr>
<tr>
<td>8</td>
<td>Terrebonne Parish, LA</td>
<td>Gulf of Mexico</td>
<td>11</td>
<td>78.7</td>
<td>3.9</td>
<td>179.4</td>
<td>11.0</td>
</tr>
</tbody>
</table>

Source: NOAA, Coastal Services Center, Historical Hurricane Tracks: 1851 to 2008.

---

2 List derived from “The Deadliest, Costliest, and Most Intense United States Tropical Cyclones From 1851 to 2006” (Blake, 2007).
Figure 7.

**Population in Coastline Counties Affected by the 10 Most Intense U.S. Hurricanes Since 1960**

(Sorted by 2008 population in affected area; population in millions)

Notes:
For hurricanes prior to 1980, the population at the time of the hurricane reflects the decennial census population prior to the hurricane. For hurricanes after 1980, the population at the time of the hurricane reflects the population as of July 1 of that year.

Sources:
NOAA Coastal Services Center, Historical Hurricane Tracks: 1851 to 2008.
SUMMARY
Between 1960 and 2008, a faster growth in population and housing, a larger increase in population density, and a higher percentage of the population in metro areas distinguished the U.S. coastline from the rest of the country. Social, economic, and environmental factors continue to draw residents to coastline destinations. While the growth in some coastline areas has slowed, most coastline sections continue to flourish. Monitoring these population trends, including the demographic components of change, will reveal whether these patterns continue.

REFERENCES


METHODOLOGY AND SOURCES OF DATA
This report used 100 percent-count decennial census data for the years 1960 through 2000, and estimates of the total population, total housing units, and the components of change for July 1, 2008. The population universe is the resident population of the United States (50 states and the District of Columbia). Migration from outside the United States, including from Puerto Rico and the U.S. Island Areas (American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands) and by the U.S. population abroad, was treated as international migration. The methodology used by the Census Bureau’s Population Estimates Program to produce population estimates for counties is available at <www.census.gov/popest/topics/methodology/2008-st-co-meth.pdf>. Each component of population change was estimated separately. All derived values were computed using unrounded data. For readability, most whole numbers in the text were rounded to the nearest hundred or thousand, and most decimal numbers were rounded to the nearest whole number. In the tables, whole numbers are unrounded or expressed in millions, and percentages are rounded to the nearest tenth.

ACCURACY AND RELIABILITY OF THE DATA
Potential sources of nonsampling error in the population estimates process include: (1) potential errors (such as differential undercoverage or overcoverage by demographic characteristics) in the enumeration (e.g., Census 2000) that serves as the base of the postcensal estimates; and (2) potential errors in the components of change (such as births, deaths, domestic migration, and net international migration) used to carry forward the population estimates.
FOR MORE INFORMATION
Population estimates at the national, state, county, and city and town levels are produced each year by the Census Bureau's Population Estimates Program and are available at <www.census.gov/popest/estimates.html>. The Population Estimates Program publishes total population estimates each year for the nation, states, counties, and subcounty units (cities and minor civil divisions). For the nation, states, and counties, population estimates also include demographic components of change (births, deaths, and migration) and estimates by age, sex, race, and Hispanic origin. The reference date for population estimates is July 1.

CONTACTS
U.S. Census Bureau
Demographic Call Center Staff
Call 301-763-2422 or 1-866-758-1060 (toll-free) or visit <ask.census.gov> for further information.
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Thomas R. Fischetti
U.S. Census Bureau
Population Division
Population Distribution Branch
301-763-2419
steven.g.wilson@census.gov
thomas.fischetti@census.gov

USER COMMENTS
The Census Bureau welcomes the comments and advice of users of our data and reports. Please send suggestions or comments to:

Chief, Population Division
U.S. Census Bureau
Washington, DC 20233-8800
### Appendix Table A.  
**Coastline Population by State: 1960 to 2008**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>179,323,175</td>
<td>203,211,926</td>
<td>226,545,805</td>
<td>248,709,873</td>
<td>281,421,906</td>
<td>304,059,724</td>
<td>124,736,549 69.6</td>
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<td>Coastline counties</td>
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<td>56,715,415</td>
<td>63,587,555</td>
<td>73,048,655</td>
<td>82,124,392</td>
<td>87,423,833</td>
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<td>Atlantic</td>
<td>26,665,037</td>
<td>30,449,628</td>
<td>31,943,197</td>
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<td>39,215,349</td>
<td>41,584,799</td>
<td>14,919,762 56.0</td>
</tr>
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<td>Gulf of Mexico</td>
<td>5,562,984</td>
<td>6,936,997</td>
<td>9,149,249</td>
<td>10,723,973</td>
<td>12,557,407</td>
<td>13,920,664</td>
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<td>Pacific</td>
<td>15,220,210</td>
<td>19,328,790</td>
<td>22,495,109</td>
<td>27,093,528</td>
<td>30,351,636</td>
<td>31,918,370</td>
<td>16,698,160 108.7</td>
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<td>439,851</td>
<td>464,883</td>
<td>548,040</td>
<td>623,198</td>
<td>682,814</td>
<td>713,357</td>
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<td>581,930 36.6</td>
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<td>4,479,494</td>
<td>4,479,494</td>
<td>1,725,133 130.1</td>
</tr>
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<td>446,292</td>
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<td>783,600</td>
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<td>873,092</td>
<td>426,800 95.6</td>
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<td>2,911,538</td>
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<td>792,902</td>
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<td>621,683</td>
<td>742,274</td>
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<td>Mississippi</td>
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<td>363,988</td>
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<td>1,610,435</td>
<td>1,426,150</td>
<td>1,426,150</td>
<td>234,076 19.6</td>
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<td>2,882,491</td>
<td>3,795,111</td>
<td>4,314,492</td>
<td>5,124,048</td>
<td>5,124,048</td>
<td>2,305,308 19.6</td>
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<td>15,645,052</td>
<td>18,008,000</td>
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<td>24,135,820</td>
<td>24,135,820</td>
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<td>550,921</td>
<td>611,645</td>
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<td>434,872 73.4</td>
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<td>Alaska</td>
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<td>243,281</td>
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<td>529,474</td>
<td>397,664 225.5</td>
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<td>Hawaii</td>
<td>632,772</td>
<td>768,561</td>
<td>964,691</td>
<td>1,108,229</td>
<td>1,211,537</td>
<td>1,211,537</td>
<td>555,426 103.6</td>
</tr>
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<td><strong>Noncoastline counties</strong></td>
<td><strong>131,874,944</strong></td>
<td><strong>146,496,511</strong></td>
<td><strong>162,958,250</strong></td>
<td><strong>175,661,218</strong></td>
<td><strong>199,297,514</strong></td>
<td><strong>216,635,891</strong></td>
<td><strong>84,760,947 64.3</strong></td>
</tr>
</tbody>
</table>

Note: Data for 1960 to 2000 are as of April 1 of each year; data for 2008 are as of July 1.

## Appendix Table B.
### Number of Counties and Population by Standard Metropolitan Statistical Area (SMSA) and Core Based Statistical Area (CBSA) Status: 1960 and 2008

<table>
<thead>
<tr>
<th>Year and area</th>
<th>Counties</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td><strong>1960</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>3,133</td>
<td>100.0</td>
</tr>
<tr>
<td>Inside SMSA</td>
<td>361</td>
<td>11.5</td>
</tr>
<tr>
<td>Outside SMSA</td>
<td>2,772</td>
<td>88.5</td>
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<tr>
<td><strong>Coastline counties</strong></td>
<td>253</td>
<td>100.0</td>
</tr>
<tr>
<td>Inside SMSA</td>
<td>77</td>
<td>30.4</td>
</tr>
<tr>
<td>Outside SMSA</td>
<td>176</td>
<td>69.6</td>
</tr>
<tr>
<td><strong>Noncoastline counties</strong></td>
<td>2,880</td>
<td>100.0</td>
</tr>
<tr>
<td>Inside SMSA</td>
<td>284</td>
<td>9.9</td>
</tr>
<tr>
<td>Outside SMSA</td>
<td>2,596</td>
<td>90.1</td>
</tr>
<tr>
<td><strong>2008</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>3,142</td>
<td>100.0</td>
</tr>
<tr>
<td>Inside CBSA</td>
<td>1,786</td>
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</tr>
<tr>
<td>Inside metro area</td>
<td>1,092</td>
<td>34.8</td>
</tr>
<tr>
<td>Inside micro area</td>
<td>694</td>
<td>22.1</td>
</tr>
<tr>
<td>Outside CBSA</td>
<td>1,356</td>
<td>43.2</td>
</tr>
<tr>
<td><strong>Coastline counties</strong></td>
<td>254</td>
<td>100.0</td>
</tr>
<tr>
<td>Inside CBSA</td>
<td>199</td>
<td>78.3</td>
</tr>
<tr>
<td>Inside metro area</td>
<td>153</td>
<td>60.2</td>
</tr>
<tr>
<td>Inside micro area</td>
<td>46</td>
<td>18.1</td>
</tr>
<tr>
<td>Outside CBSA</td>
<td>55</td>
<td>21.7</td>
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<tr>
<td><strong>Noncoastline counties</strong></td>
<td>2,888</td>
<td>100.0</td>
</tr>
<tr>
<td>Inside CBSA</td>
<td>1,587</td>
<td>55.0</td>
</tr>
<tr>
<td>Inside metro area</td>
<td>939</td>
<td>32.5</td>
</tr>
<tr>
<td>Inside micro area</td>
<td>648</td>
<td>22.4</td>
</tr>
<tr>
<td>Outside CBSA</td>
<td>1,301</td>
<td>45.0</td>
</tr>
</tbody>
</table>

Note: Standard metropolitan statistical areas defined by the U.S. Bureau of the Budget as of November 1960. Metropolitan and micropolitan statistical areas defined by the U.S. Office of Management and Budget as of November 2007.

Source: U.S. Census Bureau.
### Appendix Table C.

**Housing Units for Coastline Counties by State: 1960 to 2008**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>58,326,357</td>
<td>68,679,030</td>
<td>88,411,263</td>
<td>102,263,678</td>
<td>115,904,641</td>
<td>129,065,264</td>
<td>70,738,907</td>
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<tr>
<td>Coastline counties</td>
<td>16,078,943</td>
<td>19,658,915</td>
<td>25,325,352</td>
<td>29,824,580</td>
<td>33,016,371</td>
<td>36,250,384</td>
<td>20,171,441</td>
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<tr>
<td>Atlantic</td>
<td>8,995,564</td>
<td>10,520,243</td>
<td>12,752,797</td>
<td>14,733,411</td>
<td>16,294,503</td>
<td>17,824,303</td>
<td>8,828,739</td>
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</tr>
<tr>
<td>Gulf of Mexico</td>
<td>1,847,208</td>
<td>2,411,247</td>
<td>3,831,236</td>
<td>4,836,648</td>
<td>5,516,163</td>
<td>6,397,153</td>
<td>4,549,945</td>
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<td>Pacific</td>
<td>5,236,171</td>
<td>6,727,425</td>
<td>8,741,319</td>
<td>10,254,521</td>
<td>11,205,705</td>
<td>12,028,928</td>
<td>6,792,757</td>
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<td>Maine</td>
<td>185,603</td>
<td>201,238</td>
<td>258,566</td>
<td>306,712</td>
<td>350,552</td>
<td>383,142</td>
<td>197,539</td>
<td>106.4</td>
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<td>New Hampshire</td>
<td>38,941</td>
<td>53,132</td>
<td>76,115</td>
<td>101,773</td>
<td>113,023</td>
<td>124,237</td>
<td>85,296</td>
<td>219.0</td>
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<tr>
<td>Massachusetts</td>
<td>900,839</td>
<td>994,900</td>
<td>1,175,398</td>
<td>1,321,676</td>
<td>1,404,389</td>
<td>1,466,029</td>
<td>565,190</td>
<td>62.7</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>286,757</td>
<td>316,477</td>
<td>372,672</td>
<td>414,572</td>
<td>439,837</td>
<td>451,753</td>
<td>164,996</td>
<td>57.5</td>
</tr>
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<td>Connecticut</td>
<td>516,258</td>
<td>609,107</td>
<td>723,740</td>
<td>817,488</td>
<td>858,157</td>
<td>891,469</td>
<td>375,211</td>
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<td>New York</td>
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<td>3,960,411</td>
<td>4,128,835</td>
<td>4,254,505</td>
<td>4,530,831</td>
<td>4,716,123</td>
<td>1,112,030</td>
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<tr>
<td>New Jersey</td>
<td>1,137,918</td>
<td>1,319,239</td>
<td>1,517,020</td>
<td>1,671,927</td>
<td>1,781,964</td>
<td>1,900,530</td>
<td>762,612</td>
<td>67.0</td>
</tr>
<tr>
<td>Delaware</td>
<td>143,725</td>
<td>180,233</td>
<td>238,611</td>
<td>289,919</td>
<td>343,072</td>
<td>392,965</td>
<td>249,240</td>
<td>173.4</td>
</tr>
<tr>
<td>Maryland</td>
<td>621,032</td>
<td>743,173</td>
<td>908,602</td>
<td>1,050,271</td>
<td>1,173,433</td>
<td>1,265,341</td>
<td>644,309</td>
<td>103.7</td>
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<tr>
<td>Virginia</td>
<td>381,197</td>
<td>508,667</td>
<td>716,548</td>
<td>958,291</td>
<td>1,095,816</td>
<td>1,240,330</td>
<td>859,133</td>
<td>225.4</td>
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<tr>
<td>North Carolina</td>
<td>131,226</td>
<td>161,681</td>
<td>238,503</td>
<td>323,037</td>
<td>403,252</td>
<td>491,868</td>
<td>360,642</td>
<td>274.8</td>
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<tr>
<td>South Carolina</td>
<td>118,333</td>
<td>143,335</td>
<td>216,033</td>
<td>301,621</td>
<td>377,964</td>
<td>490,676</td>
<td>372,343</td>
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<tr>
<td>Georgia</td>
<td>83,435</td>
<td>91,540</td>
<td>123,177</td>
<td>156,388</td>
<td>185,664</td>
<td>219,979</td>
<td>136,544</td>
<td>163.7</td>
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<tr>
<td>Florida</td>
<td>1,413,401</td>
<td>2,043,865</td>
<td>3,527,960</td>
<td>4,845,750</td>
<td>5,707,936</td>
<td>6,799,916</td>
<td>5,386,515</td>
<td>381.1</td>
</tr>
<tr>
<td>Alabama</td>
<td>108,292</td>
<td>121,244</td>
<td>165,213</td>
<td>202,153</td>
<td>239,386</td>
<td>284,664</td>
<td>176,372</td>
<td>162.9</td>
</tr>
<tr>
<td>Mississippi</td>
<td>57,866</td>
<td>76,455</td>
<td>113,126</td>
<td>129,916</td>
<td>152,386</td>
<td>157,088</td>
<td>99,222</td>
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</tr>
<tr>
<td>Louisiana</td>
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<td>443,380</td>
<td>588,068</td>
<td>642,713</td>
<td>667,931</td>
<td>574,640</td>
<td>209,379</td>
<td>57.3</td>
</tr>
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<td>963,413</td>
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<td>1,778,347</td>
<td>1,985,073</td>
<td>2,370,706</td>
<td>1,622,111</td>
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<tr>
<td>California</td>
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<td>8,069,582</td>
<td>8,615,142</td>
<td>9,118,850</td>
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<td>Oregon</td>
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<td>152,125</td>
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<td>307,811</td>
<td>179,765</td>
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<td>Washington</td>
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<td>1,092,217</td>
<td>1,357,785</td>
<td>1,625,464</td>
<td>1,852,782</td>
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<td>134,475</td>
<td>192,737</td>
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<td>236,604</td>
<td>183,761</td>
<td>347.7</td>
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<td>Hawaii</td>
<td>165,506</td>
<td>216,085</td>
<td>334,235</td>
<td>389,810</td>
<td>460,542</td>
<td>512,881</td>
<td>347,375</td>
<td>209.9</td>
</tr>
<tr>
<td>Noncoastline counties</td>
<td>42,247,414</td>
<td>49,020,115</td>
<td>63,085,911</td>
<td>72,439,098</td>
<td>82,888,270</td>
<td>92,814,880</td>
<td>50,567,466</td>
<td>119.7</td>
</tr>
</tbody>
</table>

Note: Data for 1960 to 2000 are as of April 1 of each year; data for 2008 are as of July 1.

Appendix Figure A.
Radii by Strength Category for Hurricane Rita

Note: One nautical mile is equivalent to 1.2 statute miles or 1.9 kilometers.
Source: NOAA Coastal Services Center, Historical Hurricane Tracks: 1851 to 2008.