

OnTheMap for Emergency Management

Local Employment Dynamics

Analysis: Population 65 and older living alone during Hurricane Isaac

OnTheMap for Emergency Management is the fastest and most straightforward way to access statistics on vulnerable populations prior to and during an emergency. In this example, we are going to consider Hurricane Isaac's impact on people age 65 and up – an age group disproportionately likely to be harmed by storms due to residential distribution, personal resources, and geographic mobility. Determining what areas need assistance and what proportion of resources they require, in comparison with neighboring areas, is key in the early phases of preparation.

Select and View the Historical Prediction for Isaac

Step One – View Isaac as it approached

- Navigate to OnTheMap for Emergency Management: <http://onthemap.ces.census.gov/em.html>
- In the upper left corner use the search bar and type 'Isaac'. Select the appropriate result.
- Change to 'Forecast Area' and use the time dropdown to select **Fri, 24 Aug 2012 05:49:46 GMT**

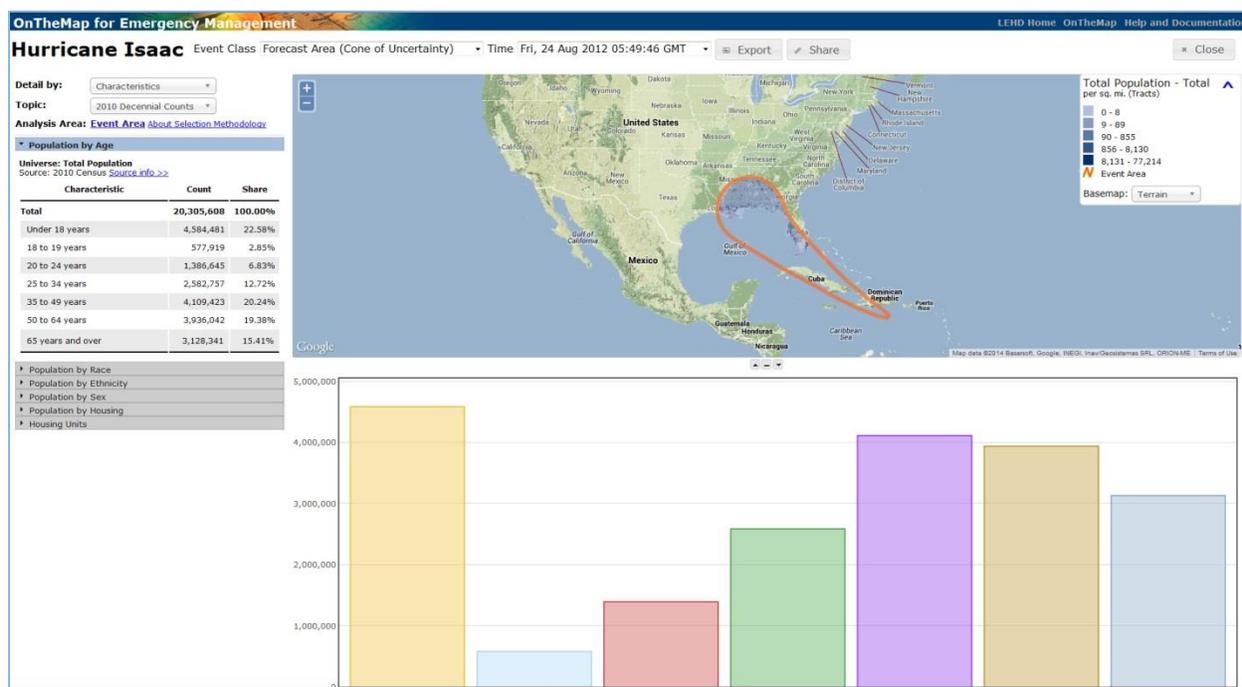


Figure 1 - Population and demographics for tropical storm Isaac's predicted path

Quickly, statistics are calculated and presented for the projected storm path. Approximately 20 million people are in the potential track of the storm – areas ranging from Puerto Rico to Louisiana.

Step Two – Explore the data and event

- Zoom in on areas of interest in the map.
- Click on a bar in the chart or row in the table to see that characteristic mapped thematically.

Examine Alternate Topics

Step Three – View 65+ Living Alone

- Change the Topic to **2010-2014 ACS Characteristics**.
- Explore the available data.
- Select **Population 65 years and over living alone**.
- Click the row titled **Living alone**.
- *Optional: Toggle the bar chart down using the down arrow to view a full map*

Selecting the data for the population 65 years and older currently living alone will show the quantity and geographic distribution of the data. Of the 20 million people potentially affected, around 800 thousand fall into this category. The majority of this population is located in Florida but, finding clusters in the raw data can be time consuming. Fortunately, this application can group data by Census geography.

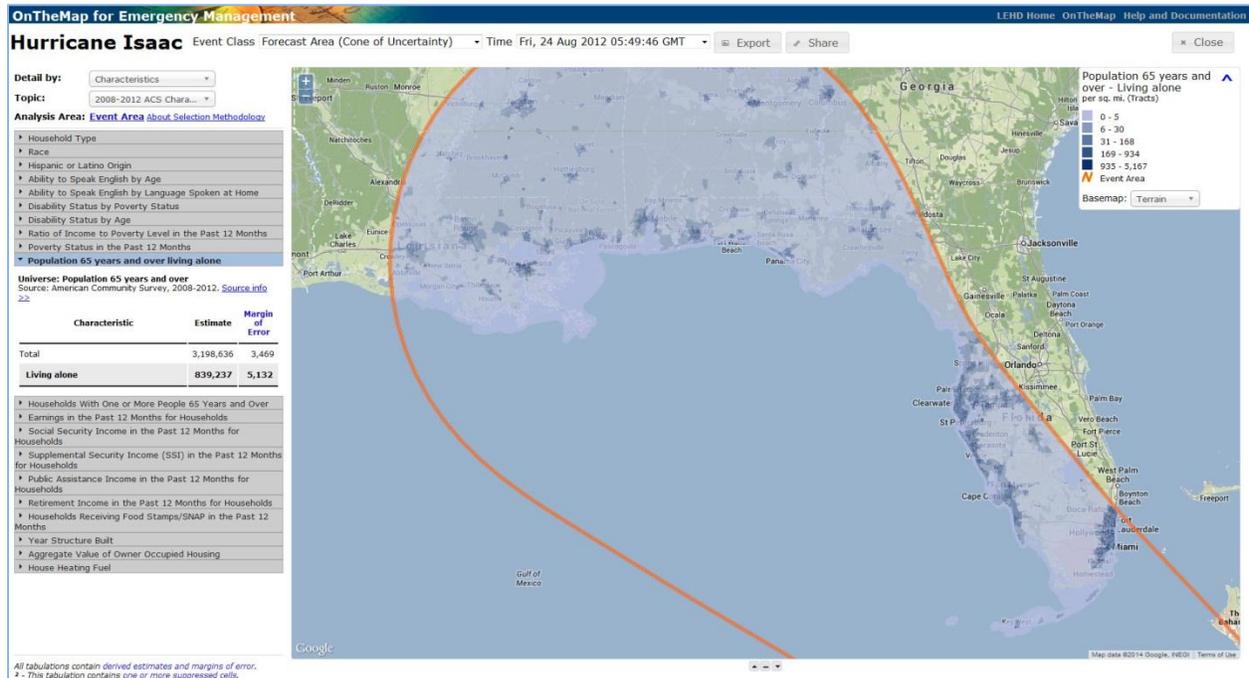


Figure 2 - Tracts in Isaac's path displaying population 65 years and over living alone

The map frame displays all Census tracts interacting within the event boundary. For ACS Characteristics, each tract is linked with an estimate and margin of error. OnTheMap for Emergency Management tallies these estimates and calculates the smallest possible margin of error using other geographic entities. See the [OnTheMap for Emergency Management Selection Methodology document](#) for more information.

Group by Geography

Step Four – Analyze by City

- Use the Detail by dropdown to select **Geography** and click on the text below the Variable label.
- Change the dataset to **2010-2014 ACS Characteristics**.
- Set the Variable Category to **Population 65 and over living alone**. Click **Living alone** and confirm Select Variables.

- Click on the **+ Select Areas** button and use the dropdown under 'Geography Type' to select Places (*Cities, CDPs, etc.*)
- Select the first 25 checkboxes and click **Select Geographies** (optional: *Uncheck all states*)

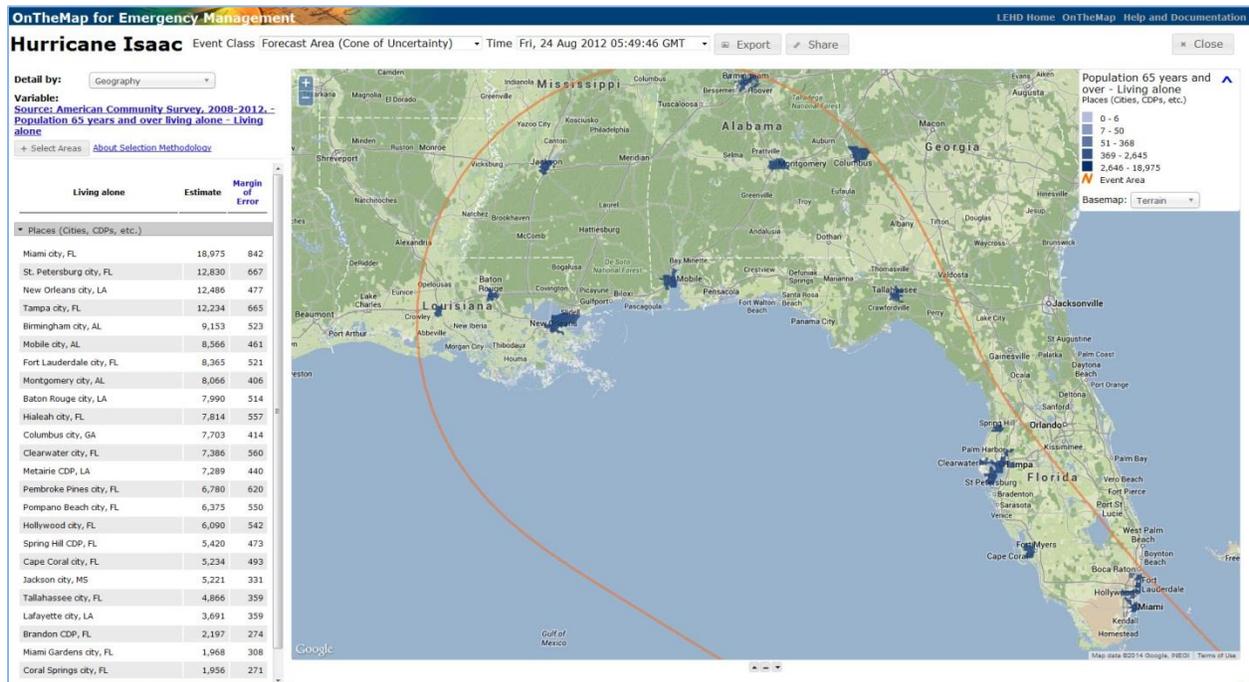


Figure 3 - Top 25 places in the Isaac's path

In the map frame, the cities and places with the largest population of people 65 years and older who are living alone are displayed. In the left panel, the estimated population for each of these places is displayed along with the margin of error. Using this knowledge, emergency managers can allocate resources based on need. User selected geographies – states, counties, places, and the entire event – are not limited to 25 items. This same analysis can be run on all counties within Isaac’s predicted path.

Some considerations by the analyst are required to produce accurate information in the event of an oncoming emergency. It is important to note that the predicted path does not predict impact. A blooming prediction cone does not indicate that the storm will increase in intensity or diameter. In the above case, it is likely that Birmingham, AL would require less assistance than the coastal cities – both due to inland storm strength and probability of impact.

Examine the True Path of Isaac

Step Five – View the Historical Event

- Change the Detail By dropdown back to **Characteristics**.
- In the Event Class option at the top of the screen select **Wind History 34kn (Cumulative Swath)**.
- Select the **2010-2014 ACS Characteristics** in the Topic dropdown.
- Open the **Population 65 years and over living alone** table.
- Click the **Living alone** row

For comparison to the predicted path, the historical wind history of the entire event can be examined to determine if the prior analysis was relevant.

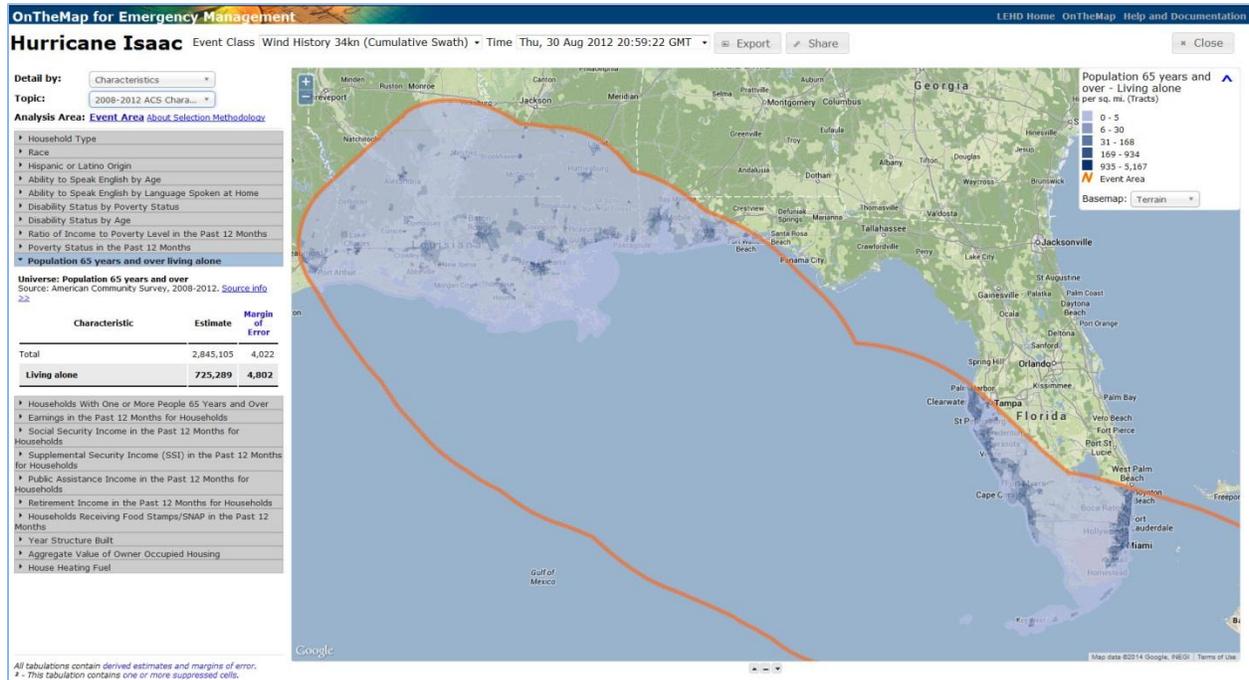


Figure 4 - Hurricane Isaac's Wind History with Population 65 years and over living alone

The historical wind history for Hurricane Isaac generally follows the path predicted on August 24, 2012. A number of areas within the expected path were hit by the storm after it developed from a tropical storm into a hurricane. The population 65 years and over living alone in the cone of uncertainty was 839 thousand, while the true number from the wind history was 725 thousand. While these two measures, prediction cone vs. history, are not directly comparable, some light is shed on information available to planners prior to a hurricane.

Geographically Assess the Impact

Step Six - Determine what counties were most affected

- Change the Detail by dropdown to *Geography*
- Click on the Variable Selected and change to **2010-2014 ACS Characteristics**, change the variable category to **Population 65+ Living Alone**, and select **Living Alone**. Click **Select Variables**.
- Using the **+ Select Areas** button, change the geography to **Counties** and click **Select All** and click **Select Geographies**
- Click on the new Counties tab that appears in the left panel
- *Optional: Use the down arrow to toggle down the bar chart and view only the map*

Data viewed previously is now broken into counties for comparison. These areas will need the most assistance following a disaster considering they have the largest vulnerable population segment.

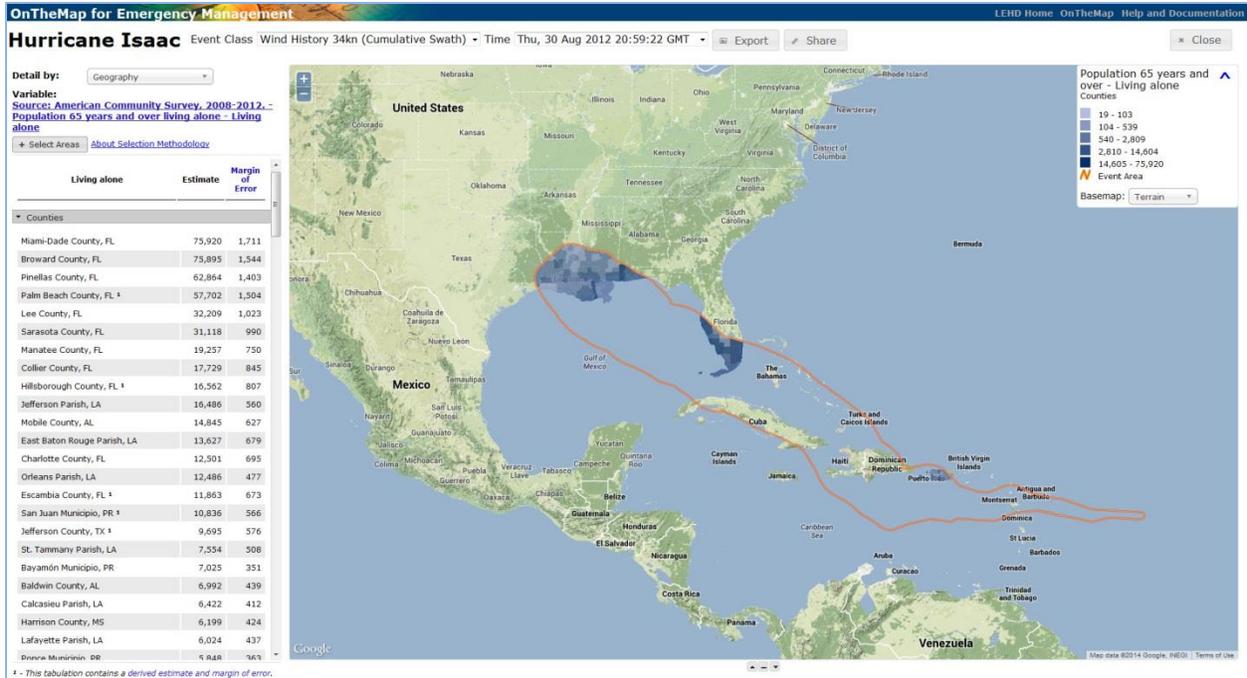


Figure 5 - Isaac's historical path viewed as population 65 years and over old living alone by county

The wind history boundary displayed represents a threshold of 34kn or higher. Each region will have been affected differently based on the conditions at the time but this analysis provides quick information on the people at risk. Using the export options, more advanced analysis can be done in a desktop GIS, programming language, or statistical package.

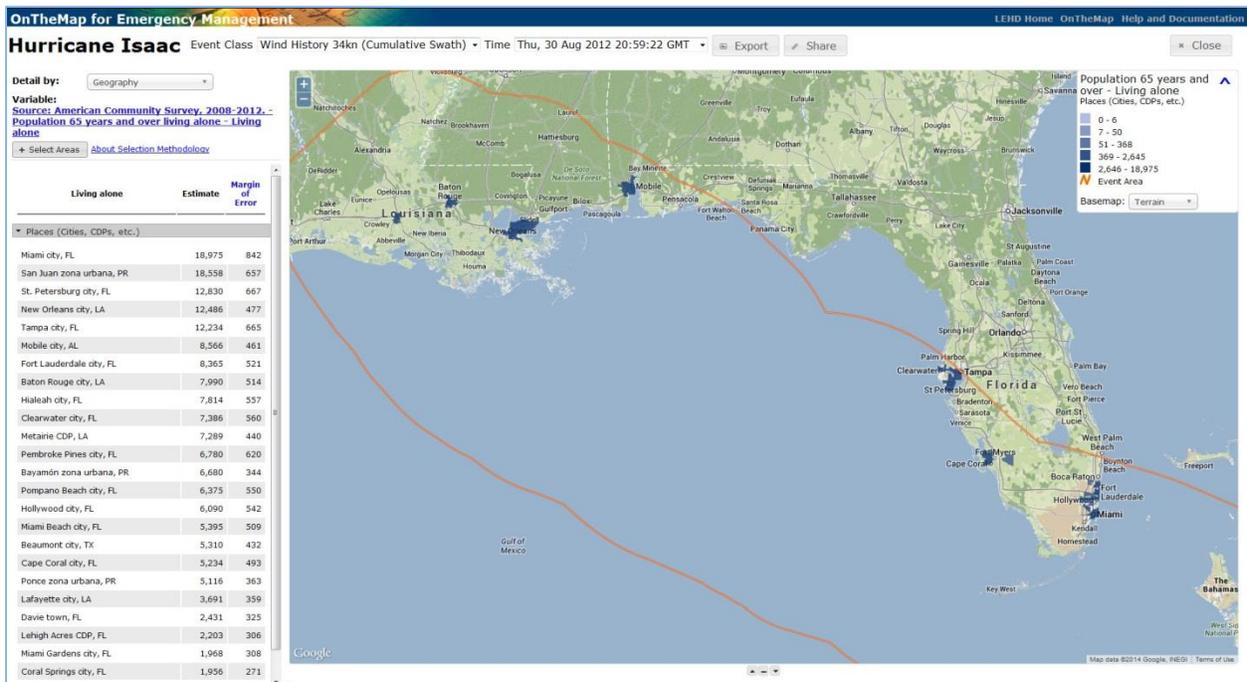


Figure 6 - Isaac's historical path viewed as population 65 years and over old living alone by top 25 most populated places

Please send questions or comments to CES.OnTheMap.Feedback@census.gov