Coastal Resilience, Long Island, USA

Coastal Resilience Project:
The purpose of the Coastal Resilience project is to provide communities with easy access to information to assist in coastal planning, zoning, acquisition, and other management decisions regarding resources at risk from sea level rise and coastal hazards. One of the principal products of the project is a spatially explicit tool that provides forecasts of inundation on the south shore of Long Island under different sea level rise scenarios. The aim of this web mapping tool is to provide communities with easy access to information for their planning, zoning, acquisition and permitting decisions.

Category: Socioeconomic

General Description:
This dataset shows population distribution for Suffolk County, NY (shown as number of people per 10 meter sq. cell)

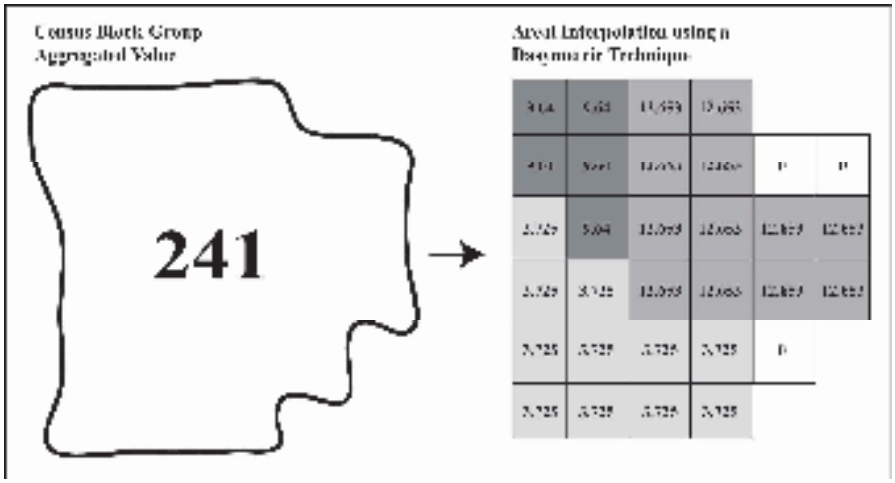
Source:
1. Suffolk County, NY parcel data (2008)
2. NOAA C-CAP data (2005)
3. US Census block data (2000)

Caveats and limitations:
Accurate depictions of human population distributions within coastal zones provide critical baseline information for assessing risk. For reasons of anonymity, the US Census Bureau aggregates household level demographic data to larger enumeration units such as the census tract and block group scales. However, these boundaries rarely reflect the natural distribution of human populations within the aggregated geographic units (Sleeter 2008). Dasymetric mapping techniques can more accurately reflect the distribution of residential populations by introducing ancillary information (i.e. residential land-use data) and redistributing population based on varying densities of residential development within the enumeration unit (in this case, census blocks). The transfer of population data from the census units to residential land-use classes is performed by areal interpolation (Mennis & Hultgren 2006).

This dataset provides an estimation of population density and distribution and is intended to illustrate population distribution at the sub-census block scale. In short, this shows relative population density/distribution within US census block units and therefore should not be viewed as an exact demarcation of population density and distribution.

Process:
Following Sleeter (2008), we used a dasymetric technique to map residential population data from the census block scale to 'people per 10m sq.' via areal interpolation (see figure below). The USGS Dasymetric Extension was used to execute this process.

Parcel data was reclassified into high, medium, and low density residential development based on the land use type and parcel size. Approximately 7% of Suffolk County's parcel database did not contain a land use attribute. We used the 2005 landcover dataset (NOAA-CSC 2005) to fill in missing land use attributes within the parcel database. Non-residential parcels were used as an exclusionary class in the dasymetric calculation. For more information on dasymetric mapping, see Sleeter (2008) Sleeter and Gould (2007) and Mennis & Hultgren (2006).



(image taken from Sleeter 2008)

For more information, see the following:

Sleeter, Rachel, 2008, A new method for mapping population distribution: U.S. Geological Survey Fact Sheet 2008-3010, 2 p. [http://pubs.usgs.gov/fs/2008/3010/].

Mennis, J. and Hultgren, T., 2006. **Intelligent dasymetric mapping and its application to areal interpolation.** *Cartography and Geographic Information Science*, 33(3): 179-194.

Sleeter, Rachel and Gould, Michael. 2007. Geographic Information System Software to Remodel Population Data Using Dasymetric Mapping Methods**.** http://pubs.usgs.gov/tm/tm11c2

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