Socioeconomic Impacts of Hurricane Storm Surge Flooding in New Hanover County, NC

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2020 will go down as the most active Atlantic hurricane season on record. 31 tropical hurricanes developed, with all but one becoming a named storm. If trends over the last five years continue, we can expect to see future seasons with similar if not more instances of large, named storms. To mitigate as much loss as possible, local governments must work with FEMA to develop disaster preparedness plans should the 'big one' hit.

The most damaging impact of a hurricane is the storm surge that can cause inland flooding of more than 10ft. Since flooding has the potential to cover wide swaths of land in low-lying areas, are the impacts of hurricane storm surge evenly felt across different socioeconomic groups?

Using a county-level DEM developed by USGS, several watersheds were delineated to create distinct geographic regions. Inundation extent data from Hurricane Florence and a Category 5 projection was overlayed on top of the watersheds and were reduced to smaller area polygons. These polygons were imported into the Community Analyst tool to gather various socioeconomic data.

After compiling and aggregating the data, it was found that in the case of a weaker, Category 1 hurricane, the impacts of the event tend to be felt by residents with higher disposable income. Given the political and economic importance of New Hanover County to the region, it is not very surprising. A Category 5 storm on the other hand yields more widespread damage, meaning the whole region is impacted versus a few groups.

Keywords: *hurricane, flooding, DEM, NC, watershed, FEMA, economics*

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