Mapping Storm Surge by using ArcGIS Pro in Tampa, FL

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Abstract

Storm surge is one of the most harmful result from a tropical system, which causes flooding, homelessness, destroyed businesses. Many vulnerable groups including children, lower income families, and the elderly can be impacted the most by storm surge flooding. In this study we aim to study how many disadvantaged individuals and businesses residing in a coastal region (Tampa, FL) are at great threat due to storm surge caused by a hurricane landing (Hurricane Ian, 2022). The results of this study can be used to predict the best option to prepare the citizens located in the Tampa, Florida area for the next potential storm. The software ArcGIS Pro was utilized to study flooding in an area that was impacted by the storm. High resolution terrain data (1-ft) from ESRI (Environmental Systems Research Institute) Living Atlas was applied to map different flooding scenarios: 1-ft, 2-ft, 1-m, 3-m, and 5-m. We investigated flooding influences through analysis of some social economical parameters including: age, population, household income, and businesses.