

Exploring Disasters and Risk: An Analysis of Research for the Future of Disasters and Vulnerability

Introduction

Hurricane Harvey impacted the Southeast region of Texas and the Gulf Coast in August 2017, breaking records for rainfall, longevity, and cost as the single deadliest US hurricane since Sandy (Weather.gov). Harvey served as a catalyst for disaster researchers in understanding impacts of city size and infrastructural impacts (Sebastian et al., Wang et al.), and in understanding the social and human components of a disaster response (Hu & Wang, Mihunov et al., Nguyen et al.). This project examined research on Harvey to analyze current trends in disaster research. Past research has utilized quantitative data and focused on planning. However, this project argues that future research should consider the different voices involved in disaster response, and that disaster research must account for the perspectives of those most affected by natural disaster events, such as those populations considered to be "vulnerable". This vulnerability is complex and is comprised of social, geographic, and economic factors explored further in this poster.

Literature Analysis

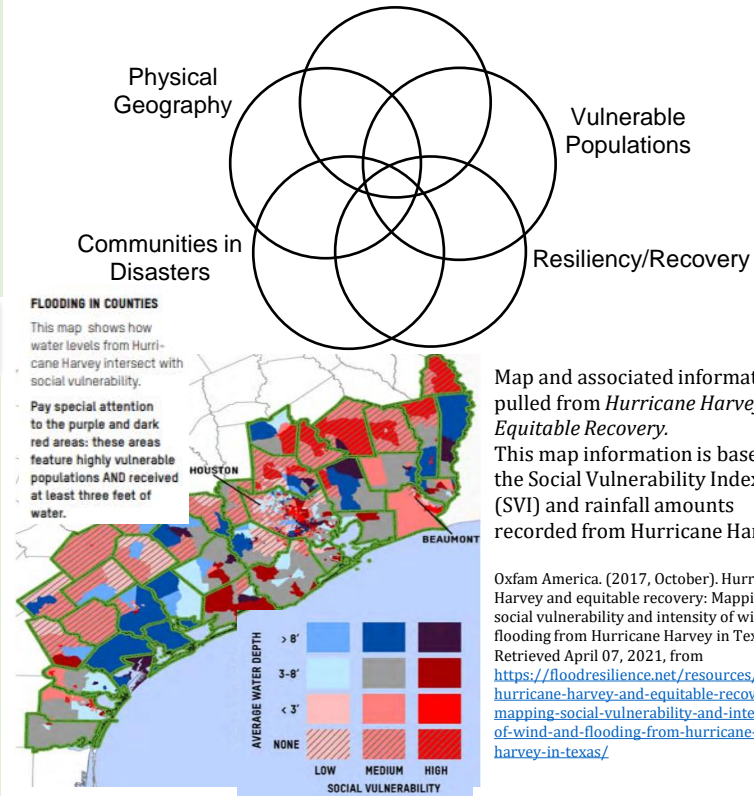
Two major themes emerged in a review of the existing literature. Looking first at Twitter, the research indicated the innovative nature of such a communication system and adaptability when other systems were down, the role of Volunteered Geographic Information (VGI) in assisting response, and ways this technology shapes people's place identity. Twitter data provides ample information; however, most analyses overlook critical factors such as the human dimensions of vulnerability. Looking at the second major theme, Vulnerability, SES status is traditionally calculated to understand vulnerability potential. However, resiliency is an important consideration in understanding vulnerability and a person's ability to recover. This literature highlights other factors that shape vulnerability, such as urban infrastructure design and utilization, which can have a detrimental impact on residents in disaster events. Yet current conceptions in disaster research are inadequate to account for multiple perspectives in conceptualizing vulnerability.

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Literature on Harvey

Geographic Information Systems (GIS)



Future Research

Looking to the future, there are ample opportunities to expand the study of vulnerability in disaster research. Within the field, geographers can look to further research in the following areas:

- Why are certain populations residentially located in areas at risk for disaster? Why do they continue to reside there?
- What resiliency plans work in creating resiliency and reducing vulnerability? How can resiliency research consider more robust conceptualization of "vulnerability"?

Conclusion

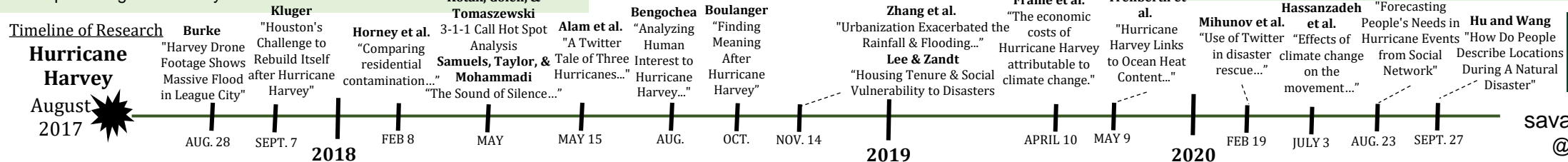
This analysis provided an interesting perspective in understanding the types of research in the intersection of Emergency Management and Geography, specifically related to Hurricane Harvey. While the literature on disasters is extensive and contains beneficial insights for understanding and planning for future disasters, it is important to consider measures of the experience of vulnerability in considerations and analysis, which necessitates both qualitative and quantitative research. Future research may bridge this gap through understanding the relationship of qualitative and quantitative data, to utilize and translate information into practical, applicable plans that take into account the ever-evolving nature of disasters and the human response to them.

Bibliography

A complete listing of bibliographic references can be seen by following this QR Code (included to the right):



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