

## Earthquake and Flooding Hazards

Eduardo Hocker\*

*Department of Anthropology, Mississippi State University, Mississippi, United States*

### DESCRIPTION

Recent climate-related and tidal wave harmful events have highlighted the redoubled exposure and vulnerability of societies in coastal areas. Once harmful earthquake and tidal wave hazards happen and have an effect on cities, settlements and infrastructure, immediate and economical actions area unit needed that make sure the step-down of the injury and loss of human life. Correct mitigation of damages following unfortunate events extremely depends on the out there info and also the fast and correct assessment of the case. Responding native and national authorities ought to be provided prior to with info and maps wherever the best damages thanks to unfavorable, native web site conditions just in case of stronger earthquakes and earthquake-related secondary effects like landslides, state change, soil amplifications or compaction will be assumed. The higher pre-existing reference info of a neighborhood in danger is ready and detailed, the higher a crisis-management will react just in case of hazards and connected secondary effects.

Information of geodynamic processes could be a basic want for the semipermanent safety of cities, settlements, infrastructure and industrial facilities. The assessment of potential hazard prone areas is prime for coming up with functions and risk state, particularly with relevancy oversight and maintenance of settlements, infrastructure, industrial facilities and of extended lifelines. Areas at explicit risk embrace road networks, buildings, production facilities, extracting and process plants and non-electronic information records. Technical interdependencies between infrastructures have the potential for initiating widespread cascading effects of failure or loss of service. The clash of a temperature change driven increase of flooding hazards like storm surge and flash floods with explosive, uncontrolled urban area and dynamic urban patterns in coastal areas constitutes an extra increasing risk.

The analysis should strengthen the economic and social group resilience to potential disasters and to enhance state, interference and mitigation through additional applicable risk assessment and innovative management methods. What is more, this highlights the requirement for multidisciplinary scientific

approaches to converge on the matter of identification of vulnerability (vulnerability is that the condition determined by physical, social, economic and environmental factors or processes, that will increase the condition of a community to the impact of hazards).

The aim of this contribution is to develop adaptation methods by presenting associate approach during which Geographic Info Systems (GIS), used beside remote sensing information, contribute to the analysis and presentation of data, particularly needed for the increasing geo-hazards in coastal areas, like earthquakes, landslides, flooding, tsunamis or storms. The flexibility to undertake the assessment, observance and modeling will be improved to a substantial extent through the present advances in remote sensing and GIS technology. Causative or crucial environmental factors influencing the disposition of settlements, industrial and infrastructural facilities to be suffering from natural hazards and also the potential injury intensity will be analyzed interactively in a very GIS info. The interactions and dependencies between totally different causative factors will be unreal and weighted step by step during this GIS atmosphere. The most objective is that the detection of areas additional at risk of hazards and so as consequence, the vulnerability assessment in step with an even, systematic and clearly organized approach which will be utilized in any space. This may be incontestable by the instance of urban center space in NE-Greece. The city's geographical position and money importance imposes the requirement for an intensive and complete study of natural hazards that may have an effect on the protection of business and infrastructural plants and facilities. Most of the economic plants like the oil plants area unit settled close to the coast (0-2 m on top of ocean level). The question that arises is whether or not water level rise thanks to environmental condition modification can have consequences for the protection of those plants. Another crucial issue is that the detection of areas at risk of flash floods associated with high precipitation rates inside short times inflicting the flooding of lowlands. Thanks to temperature change the intensity of those events is anticipated to extend.

Native web site conditions play a very important role once considering earthquake shaking and injury intensities aboard

**Correspondence to:** Dr. Eduardo Hocker, Department of Anthropology, Mississippi State University, Mississippi, United States, E-mail: eduardo-hocker@ucsd.edu

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their native variations. The ground-shaking throughout associate earthquake preponderantly depends on advanced issue interactions like the magnitude, properties of fault plane solutions, the gap from the fault and native earth science conditions. Native morphometric properties, which might be derived from digital elevation information and evaluations of

aerial and satellite information in step with an equivalent approach, influence the condition to flooding. Whenever inundation events happen in coastal areas thanks to flash floods, storm surge or tidal wave waves, the morphometric settings verify the condition of the world to be suffering from inundations to an excellent extent.