



Modeling of tsunami preparedness and effectiveness of warnings in USA

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Plans for expansion of the Pacific tsunami warning system to the Atlantic and Caribbean underscores the tsunami risk in much of the U.S. A model predicts the factors that influence preparedness and identifies key performance indicators to design and guide outreach education is an essential tool for helping ensure that communities are prepared to meet the demands required for effective response.

A new NSF-funded study looks to refine an empirical model developed in multi-cultural settings for hazards such as earthquakes, volcanic hazards and wildfires and test its capability to predict preparedness, including response to warnings, for tsunamis in 8 U.S. coastal communities in Alaska, California, Florida, Hawaii, North Carolina, Oregon, Puerto Rico and Washington. Data will be obtained with questionnaires administered to adults in two phases separated by 6 months We propose to 1) develop a model predicting responsiveness to warnings and other personal preparedness, 2) describe the structure of the cognitions that underlie motivation to prepare and the personal and normative decision processes that determine response to warnings, 3) develop cognitive maps of the preparedness and warning processes for education, and 4) develop measures that can be used to develop cost-effective interventions and that represent key performance indicators.

This research aims to provide the capability to predict the factors that facilitate and hinder tsunami preparedness as a supplement to Pacific tsunami warning systems. Our theoretical ideas, methodology, and findings could be adapted to fit evolving systems in the Mediterranean and Indian oceans.