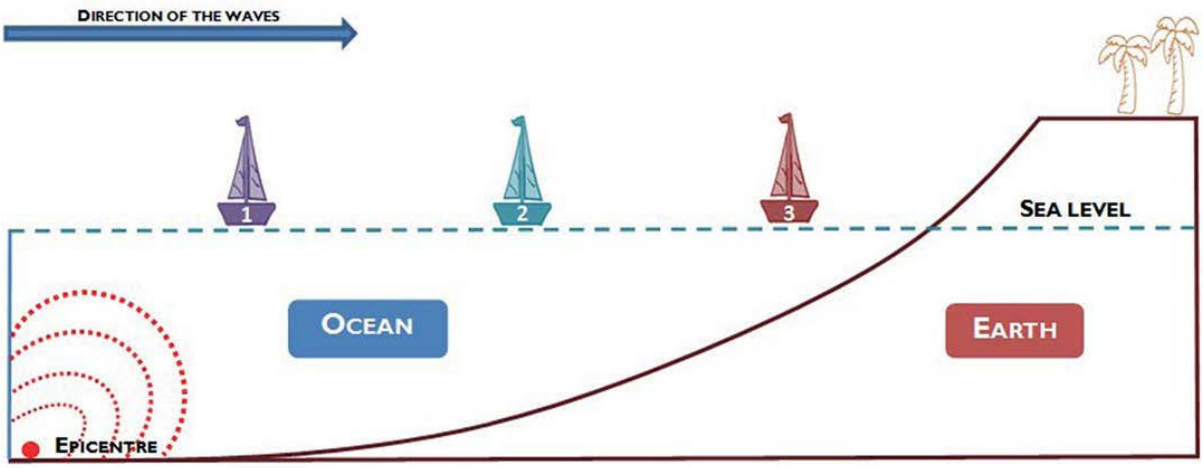
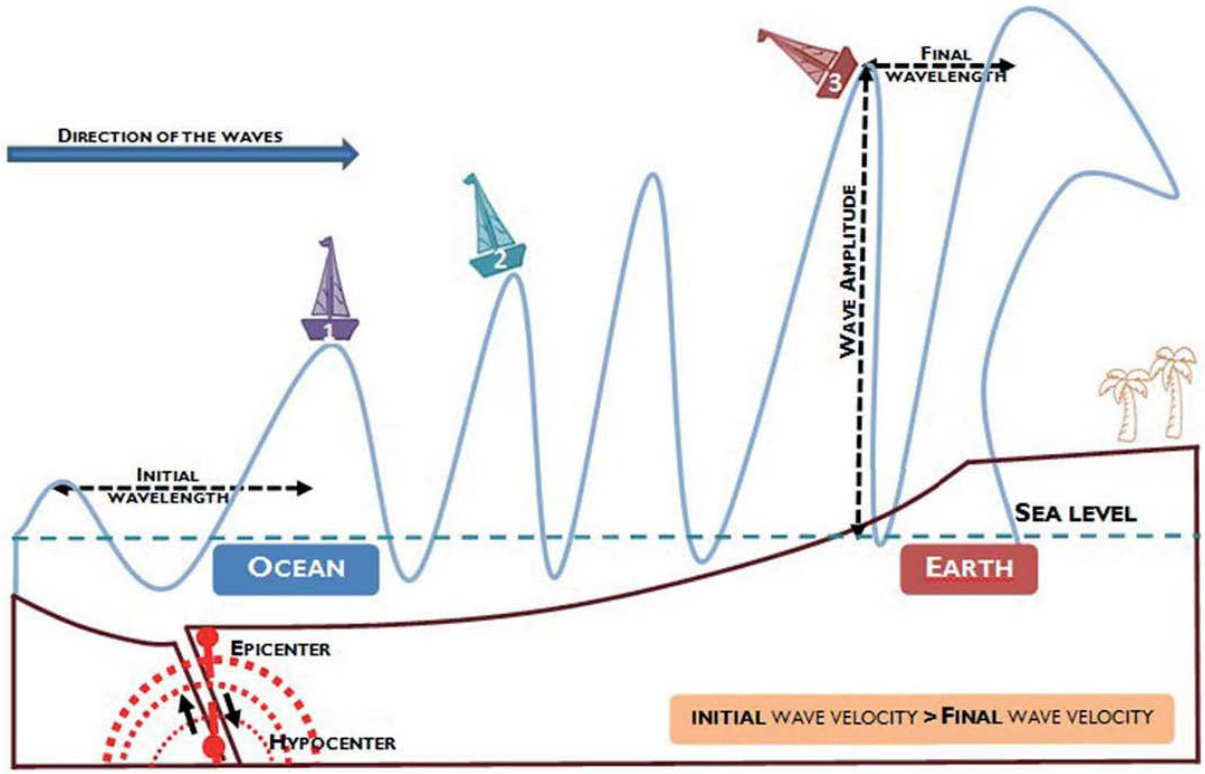
What happens to the boats? The 1755 Lisbon earthquake and Portuguese tsunami literacy

April 10 2017





Scenario presented at the beginning of the study interviews and then the "correct answers." Credit: Clara Vasconcelos et al., *Geosphere*, and The Geological Society of America.

In their paper published this week in *Geosphere*, authors Clara Vasconcelos, Joanna Torres, and Joana Costa point out the need for continued geoscience education on the topic of tsunamis and other earthquake-related hazards.

Vasconcelos and colleagues use the 1 Nov. 1755 Lisbon, Portugal, earthquake as the basis for their study. The earthquake, with a Richter magnitude estimated between 8.6 and 9, is one of the largest in recorded history. Not only that, the city was then hit by a tsunami and engulfed in fire.

The earthquake and its aftermath remains part of the generational memory of area residents, but it has been forgotten or not heard of by younger groups.

The main aim of this study was to evaluate Portuguese citizens' scientific literacy regarding tsunamis and to analyze their knowledge related to the 1755 earthquake. Vasconcelos and colleagues conducted 206 structured interviews and asked the general public to collaborate. At the beginning of the interviews, people were shown a drawing representing a tsunami epicenter and three boats in different locations. They were asked to decide which boat they thought would suffer the most. Only 42.7 of the interviewees gave the correct answer, that boat three (the one closest to shore) would experience the most damage. An equally high percentage of respondents (43.4%) chose boat 1 (farthest from shore), and 13.6% of

respondents chose boat 2 (in the middle).

In analyzing the results of that and other questions, the authors found that people showed a wide lack of knowledge regarding tsunamis, including the 1755 event. However, the majority of interviewees recognized the need to know more about these issues.

The authors conclude that this evidence indicates the importance of including historical, social, and scientific issues in geosciences programs, giving more relevance to teaching seismic risks, their prevention, and possible responses.

They write, "If we want citizens to be active and to play a responsible role in the development of their own society, these historical socio-scientific issues must be clearly and decisively addressed in the classroom."

More information: Clara Vasconcelos et al. What happens to the boats? The 1755 Lisbon earthquake and Portuguese tsunami literacy, *Geosphere* (2017). DOI: 10.1130/GES01205.1

Provided by Geological Society of America