

Abstract Submitted  
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**Physics of the environment: possible Sumatra Tsunami warning times for large animals in Sri Lanka** DAVID G. BROWNING, Department of Physics, University of Rhode Island, PETER M. SCHEIFELE, Department of Animal Science, University of Connecticut, WILLIAM A. VONWINKLE, Old Ironsides, New London, CT — There has previously been significant anecdotal evidence that animals can anticipate or sense seismic events. It is known that large animals, specifically elephants, sense and utilize low frequency sound. The object of this paper is to estimate the possible warning times that large animals in Sri Lanka could have had of the Sumatra Tsunami, assuming they could sense low frequency wave transmission from the initial earthquake arriving by either atmospheric, ocean, or bottom paths. The atmospheric path appears to be the least efficient due to relatively high attenuation and poor coupling to the source. It would also give the shortest warning time: approximately 30 minutes. The ocean path via the deep sound channel, which has been shown by a previous Bermuda experiment to be an efficient means of coupling seismic energy to an island, would give a warning time of more than 1.5 hours. The bottom path(s), which gave strong received signals at a Sri Lanka seismic station, would give a warning time of about 2 hours. These estimates should provide a context for animal behavior reports.

David G. Browning  
Department of Physics, University of Rhode Island

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