

## Volcanism-induced tsunamis and tsunamiites

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As can be deduced from the 2004 Indian Ocean disaster, tsunamis can cause large amounts of casualties. For the assessment of future risk posed by tsunamis, it is necessary to have sufficient information for understanding past tsunami events. Recent work on tsunami deposits has provided new information on paleotsunami events, for instance about their recurrence interval and the size of the tsunamis. Tsunamis are caused not only by earthquakes but also by volcanic eruptions. The 1793 Mayuyama tsunami is one of the cases. Because volcanogenic tsunamis occur less frequently than earthquake-related tsunamis, it is even more important to find and study geological evidence for past eruption-related tsunami events. In this study, eight recent case studies on volcanism-induced tsunami deposits are reviewed. These regard the tsunamis related to the Managua, Santorini, Aniakchak, Komagatake, Kurakatau, Vulcan, Karymskoye and Tavurvur eruptions. The most distinct feature of these tsunami deposits is a 'pumiceous sand layer'. This is a mixture of pumice and beach sand; both are transported and deposited inland by a tsunami. The possible origin of the pumice in the layer is drift pumice, reworked pumice, and primary pumice fall-out during the tsunami run-up. This unique sediment layer is often observed in near-source tsunami deposits of volcanic origin. Chronological correlation of tephra and tsunami deposits provides a rare opportunity to study the tsunami-generating process during the eruption. Volcanism-induced tsunami deposits are informative, especially for studies of eruption-related tsunamis that occurred in the pre-history and useful to evaluate future risks due to tsunamis of volcanic origin.