

Japan - Okushiri - 12 July 1993

A large earthquake with a magnitude of 7.7, centered about 15-30 km offshore in the Sea of Japan, struck the Okushiri region of Hokkaido. Five minutes later, waves ranging from 5 to 10 meters in height crashed on the closest shores destroying fishing villages and killing 239 people. Field survey documented the maximum wave height to be 31 meters in a small valley on Okushiri Island.

Although coastal walls had been erected to offer tsunami protection, they were breached by the large waves which swept up buildings, vehicles, docked vessels and heavy materials at coastal storage areas, transforming them into waterborne missiles that obliterated everything in their path. The collisions sparked electrical and propane gas fires. Access by fire engines was blocked by debris. Fires burned uncontrolled across the ravaged shores of Aonae, a small fishing village on Okushiri's southern peninsula.



Destruction of the town of Aonae by the July 12, 1993 tsunami

The Japan Meteorological Agency (JMA) issued a timely and accurate warning for this event, but there was not enough time for the warning to be disseminated everywhere - given the tsunami's short travel time. However, even before the warning was issued, many residents felt the strong motions of the earthquake and, aware of the tsunami danger, saved themselves by fleeing immediately to higher ground.

Although the loss of 239 lives was a great tragedy, the Okushiri event clearly demonstrated that the impact of tsunamis can be reduced through warning technology and community education. Such preparedness in Japan greatly reduced the number of casualties. This event has also become the best-documented tsunami disaster in history. Detailed damage assessments of transportation and telecommunications networks, interviews with survivors and local officials, runup and inundation measurements and extensive aerial photography, produced a database especially valuable for future planning in tsunami disaster mitigation. The knowledge gained from this disaster could serve as a model to protect other potentially vulnerable coastal communities.

A view of tsunami and related fire damage on southeast Okushiri Island in the community of Aonae. Photo orientation is looking northeast. Numerous fires broke out following the tsunami, adding to the property loss and misery. More than 120 people were killed in Japan (Okushiri and Hokkaido Islands) by the tsunami. Photos provided by: Commander Dennis J. Sigrist, acting Director of the International Tsunami Information Center.