

Chapter 3 - Risk and Vulnerability Assessment

Table 15: Summary of Significant Tsunami Events

Event Name, Date	Geographical Extent	Severity	Impacts
Local tsunami (Tonga Trench) June 17, 1917	Pago Pago Harbor, Tutuila	Run up 4 feet (1.2 meters)	Many houses destroyed, church damaged.
Aleutian tsunami April 1, 1946	Pago Pago Harbor	Run up 2.6 feet (0.8 meter)	Pacific-wide impacts. Several huts washed away.
Kamchatka, Russia tsunami November 4, 1952	Pago Pago Harbor	Run up 2.7 feet (0.9 meter)	Pacific-wide tsunami. No documented damage.
Aleutian tsunami March 9, 1957	Pago Pago Harbor, Tutuila	Run up 4 feet (1.2 meters)	Road flooded.
Chilean tsunami May 22, 1960	Pago Pago Harbor, Tutuila	Run up 4.5 feet (1.4 meters) at harbor entrance, 10.7 feet (3.3 meters) at the inner end of harbor (PPG), Run up 16 feet (4.9 meters) Tutuila, 8 feet (2.4 meters) Pago Pago (NGDC website)	No documented damage.
Local tsunami (Loyalty Islands) May 16, 1995	Pago Pago Harbor	Run up 1.6 feet (0.5 meter)	No documented damage.

3.14.6.1. Tongan Trench Tsunami (1917)

In June 1917, an 8.0 magnitude earthquake, the largest recorded in the area, at a depth of 15.5 miles (25 kilometers) within the Tonga Trench, generated a localized tsunami with a recorded run-up height of 3.6 feet (1.2 meters) above mean sea level (MSL) in Pago Pago Harbor. Damage included the total loss of several houses and a church on the island of Tutuila.

3.14.6.2. Aleutian Tsunami (1946)

In April 1946, a 7.8 magnitude earthquake in Alaska's Aleutian Islands generated a Pacific-wide tsunami resulting in catastrophic damage and loss of life throughout the Pacific. The recorded run-up height for Pago Pago Harbor was 2.4 feet (0.8 meter) above MSL and damage included total loss of several houses.

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3.14.6.3. Russian Tsunami (1952)

In November 1952, an 8.2 magnitude earthquake in Kamchatka, Russia, generated a Pacific-wide tsunami with recorded run-up height for Pago Pago of 2.7 feet (0.9 meter) above MSL. There was no historical data found documenting local damage.

3.14.6.4. Aleutian Tsunami (1957)

In March 1957, an 8.3 magnitude earthquake in Alaska's Aleutian Islands generated a Pacific-wide tsunami resulting in significant damage and loss of life throughout the Pacific. The recorded run-up height for Pago Pago Harbor was 3.6 feet (1.2 meters) above MSL. Damage included a flooded road on Tutuila.

3.14.6.5. Chilean Tsunami (1960)

In May 1960, an 8.2 magnitude earthquake in Chile generated a Pacific-wide tsunami, causing major damage and loss of life throughout the Pacific. For the island of Tutuila, the recorded run-up height was 14.7 feet (4.9 meters), and in Pago Pago Harbor it was 7.2 feet (2.4 meters) above MSL. There was no specific historical data found documenting local damage.

3.14.6.6. Loyalty Islands Tsunami (1995)

In May 1995, a 7.7 magnitude earthquake in the Loyalty Islands generated a South Pacific tsunami with recorded run-up in Pago Pago Harbor 1.5 feet (0.5 meter) above MSL. There was no historical data found documenting local damage.

3.14.6.7. M6.7 quake hits near Samoa, causes small tsunamin

September 28, 2006 Kyodo News

An earthquake with a magnitude of 6.7 occurred under the ocean floor near the Samoa islands on Thursday and triggered small tsunami, according to the U.S. Geological Survey and the Hawaii-based Pacific Tsunami Warning Center, but there were no reports of damage.

The quake struck under the seabed in the South Pacific, about 195 kilometers east-southeast of Hihifo in Tonga and 290 km south-southwest of Pago Pago in American Samoa, the U.S. Geological Survey said.

The Hawaii Tsunami Warning Center said an 8-centimeter rise in sea levels was observed in Pago Pago.

"Sea level readings indicate a tsunami was generated. It may have been destructive along coasts near the earthquake epicenter," the center said in a bulletin posted on its website.

For those areas, it said, "when no major waves are observed for two hours after the estimated time of arrival or damaging waves have not occurred for at least two hours then local authorities can assume the threat is passed."

⁴⁰ Asian Economic News, Oct 2, 2006

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3.14.6.8. Tsunami watchn

At 7:39 a.m. April 1, 2006 an 8.0 magnitude earthquake struck the Solomon Islands, epicentered about 25 miles southwest of the town of Gizo and about 217 miles from the capital Honiara. A second 6.7 magnitude earthquake epicentered to the north of Gizo occurred a few minutes later. Within 5 minutes a tsunami wave approximately 10-15 feet came ashore and washed as far as a half a mile inland in some places before receding. At least 20 people are reported dead or missing the day after the tsunami. A tsunami watch was issued for nearby Pacific islands, including; New Zealand, the Philippines, American Samoa, Guam and Fiji. Hawai'i was put under a tsunami advisory which was lifted by the evening.

⁴¹ www.tsunami.org

⁴² <http://www.aims.gov.au/pages/research/coral-bleaching/scr2004/pdf/scr2004v2-14.pdf>