

TSUNAMIS

The loss of life and emotional devastation brought by the earthquake/tsunami that hit Japan on March 11 are immeasurable and unfathomable. The Fukushima, Iwate and Miyagi prefectures will need many years to rebuild and recover; the emotional scars will never go away. The earthquake's epicenter was located just off the northeast coast of Japan, measured 8.9 magnitude and sent a 33-foot high tsunami wave to the coast of Japan.

(For more on the affected area, [click here](#) for the CNN link which provides a thorough overview.)

Secondary to the emotional impact of this tragedy is the economic impact, estimated to be in excess of \$300 billion. AIR released its initial estimate of the "insured" earthquake portion of this loss at \$15-\$35 billion and then revised this estimate to **\$20-\$30 billion** on March 25. The portion of this loss attributed to the tsunami will take some time to calculate, as will the supply-chain disruption portion of the loss.

A comprehensive review of the local Japan earthquake insurance market was provided by Fitch on March 18.

WHAT ARE TSUNAMIS?

Tsunami (soo-NAH-mee) is a Japanese word that means "harbor" (tsu) "wave" (nami). Most geological or weather agencies (i.e., U.S. Geological Survey or the National Oceanic and Atmospheric Administration) define tsunami as:



"A wave or series of waves caused by an earthquake, volcano eruption, landslide or collision of the earth with a meteorite, comet or asteroid."

It seems we went a fairly long stretch of years not hearing about any significant tsunami activity and now, since 2004, we've seen the following significant events:

Date	Perils	Area	Number of Fatalities
12/26/2009	Earthquake/Tsunami	Southern Asia, Sri Lanka, Indonesia, Thailand, India, Bangladesh, Myanmar, Maldives, Malaysia	283,000
2/27/2010	Earthquake/Tsunami	Chile	800
3/11/2011	Earthquake/Tsunami	Japan	27,500 (estimate)



11 FACTS ABOUT TSUNAMIS

1. A tsunami is a series of sea waves caused by an underwater earthquake, landslide or volcanic eruption. More rarely, a tsunami can be generated by a giant meteor impact with the ocean.
2. A tsunami is not just one wave but a series of waves or a “wave train.”
3. Many witnesses say a tsunami sounds like a freight train.
4. When the ocean is deep, tsunamis may be less than a foot high on the ocean’s surface, can travel at speeds up to 500 mph without being noticed and cross the entire ocean in less than a day.
5. Once a tsunami reaches the shallow water near the coast, it slows down. The top of the wave moves faster than the bottom, causing the sea to rise dramatically, as much as 100 feet at times.
6. Tsunami waves can be as long as 60 miles and as much as an hour apart. These waves can cross entire oceans without losing much energy.
7. Flooding can reach land 1000 feet (300 meters) from the coastline, and the dangerous waves have enough force to lift giant boulders, flip vehicles and demolish houses.
8. Scientists can accurately estimate the time when a tsunami will arrive almost anywhere in the world, based on calculations using the depth of the water, distances from one place to another and the time that the earthquake or other event occurred.
9. Hawaii is the U.S. state at greatest risk for a tsunami – they get about one per year and a damaging one every seven years. The biggest tsunami that occurred in Hawaii happened on April 1, 1946, where the coast of Hilo Island was hit with 30-foot waves coming in at 500 miles per hour. 170 people died as a result.

10. In 2004, the Indian Ocean tsunami was caused by an earthquake that is thought to have had the energy of 23,000 atomic bombs. Within hours of the earthquake, killer waves radiating from the epicenter slammed into the coastline of 11 countries, from east Africa to Thailand. By the end of the day, the tsunami had killed 150,000 people. The final death toll was 283,000.
11. Not counting the 2011 tsunami in Japan, there were 26 tsunamis that killed at least 200 or more people in the last century.

SOURCES

National Geographic
FEMA
CNN

OTHER FACTS ABOUT TSUNAMIS

- Just as a 10 meter (33 foot) wave hit Sendai, Japan on March 11, 2011, a wave of similar height hit Constitucion, Chile on February 27, 2010.
- The Tsunami Warning System (TWS) in the Pacific, comprised of 26 participating international Members States, monitors seismological and tidal stations throughout the Pacific Basin.
- The Pacific Tsunami Warning Center (PTWC) is the operational center of the Pacific TWS. Located in Honolulu, PTWC

provides tsunami warning information to national authorities in the Pacific Basin.

- An earthquake generates a tsunami if it is of sufficient force and there is enough violent movement of the earth to cause substantial and sudden displacement of a massive amount of water.
- The first wave in a tsunami is not necessarily the most destructive. Tsunamis are not tidal waves.
- Tsunami waves are able to cross entire oceans without great loss of energy. The Indian Ocean tsunami traveled as much as 3,000 miles (nearly 5,000 kilometers) to Africa, arriving with sufficient force to kill people and destroy property.
- Scientists say that a great earthquake of magnitude 9 struck the Pacific Northwest in 1700 and created a tsunami that caused flooding and damage on the Pacific coast of Japan.
- The most damaging tsunami on record before 2004 was the one that killed an estimated 40,000 people in 1782 following an earthquake in the South China Sea. In 1883, some 36,500 people were killed by tsunamis in the South Java Sea, following the eruption of Indonesia's Krakatoa volcano. In northern Chile, more than 25,000 people were killed by a tsunami in 1868.
- The Pacific is by far the most active tsunami zone, according to the U.S. National Oceanic and Atmospheric Administration (NOAA); but tsunamis have been generated in other bodies of water, including the Caribbean and Mediterranean Seas and the Indian and Atlantic Oceans.
- North Atlantic tsunamis include the tsunami associated with the 1775 Lisbon earthquake, which killed as many as 60,000 people in Portugal, Spain and North Africa. This quake caused a tsunami as high as 23 feet (7 meters) in the Caribbean.
- The Caribbean has been hit by 37 verified tsunamis since 1498. Some were generated locally and others were the result of events far away, such as the 1775 earthquake near Portugal. The combined death toll from these Caribbean tsunamis is about 9,500.

SOURCES

- U.S. Department of Commerce
- National Oceanic and Atmospheric Administration
- National Weather Service
- Intergovernmental Oceanographic Commission
- National Geographic





PROPERTY COVERAGE

Coverage questions will be complex for this event, especially for locations sustaining damage from multiple perils (earthquake and tsunami). Across the industry, no one standard definition applies to tsunami. For example, tsunami falls under the definition of earthquake for most policies issued locally in Japan, and even in some insurer policy wordings (i.e., Lexington); then there are other property policies where tsunami falls under the flood definition (i.e., FM Global, Willis’ “WAR” policy).

Many more issues will be of concern:

- Regarding Contingent Business Interruption claims, does coverage exist for direct and indirect customers and suppliers?
- What coverage exists for Civil/Military Authority and Ingress/Egress? What day limitation applies? It is usually between 30 to 60 days...**and now 60 days does not seem like ample coverage when hit with the perfect storm of a catastrophe like this one.**
- Some policies (i.e., FM Global) contain exclusions for certain coverages when caused by flood or earthquake in certain high hazard zones, such as:
 - Service Interruption
 - Contingent Time Element
 - Miscellaneous Unnamed Locations
 - Automatic Coverage

- How does your policy read?
- How will claims be adjusted when it comes to the delay caused by the leakage of radioactive material from the nuclear plants?

The industry has never been hit with such a complex event as this one...and it will take some time to adjust these claims. If your account has some of these coverage or claims issues, you can contact your regional NPP broker for further review of your property insurance policy.

CONTACTS

For additional information, please contact your Willis Client Advocate® or:

David Finnis – NPP Leader

404 302 3848

david.finnis@willis.com

Mary Broderick – New England Region

617 351 7432

mary.broderick@willis.com

Paul Richardson – Northeast Region

212 915 7939

paul.richardson@willis.com

Quentin Van Marcke de Lummen – Atlantic Region

804 527 2355

quentin.vanmarckedelummen@willis.com

Ed Atherton – Southeast Region

404 224 5150

ed.atherton@willis.com

David Hartline – South Central Region

303 996 6723

david.hartline@willis.com

Dick Forand – Midwest Region

312 621 4774

dick.forand@willis.com

Frank Beuthin – Southwest Region

213 607 6341

frank.beuthin@willis.com

For past issues of our publications on other topics of interest, please visit the **Property website**.

The observations, comments and suggestions we have made in this publication are advisory and are not intended nor should they be taken as legal advice. Please contact your own legal adviser for an analysis of your specific facts and circumstances.

