

The Great Tsunami of Meiwa

That Struck Yaeyama and Miyako Islands

on April 24, 1771 (246 years ago)



Mayor of Ishigaki commemorates victims of the great tsunami.

Great Sakishima Tsunamis **with a recurrence interval of 150 to 400 years**

On August 9, 2013, a research team of the University of Tokyo and Tohoku University announced that they had ascertained, for the first time, that tsunamis causing damage to buildings and people had repeatedly struck Ishigaki and Miyako Islands and their vicinity every 150 to 400 years.

The recurrence interval was determined by radiocarbon dating of coral boulders, known as tsunami stones, scattered around the coasts of these islands. These corals are considered to have been washed ashore by past tsunamis.

The research team has studied a period spanning 2,400 years.

It is known that in 1771, a great tsunami with a maximum height of approximately 30 m hit Ishigaki and Miyako Islands and claimed the lives of more than 12,000 people. This is known as the Great Tsunami of Meiwa. However, the recurrence interval of tsunamis before then had remained unknown due to lack of records. According to Mr. Daisuke Araoka of the University of Tokyo, this discovery will help predict future tsunami events.

The research team chose 123 Porites fossil coral boulders measuring more than 1 m, collected along the coasts of six islands including Ishigaki, Tarama and Miyako Islands. These boulders were considered to be the remains of larger tsunami stones. The research team conducted radiocarbon dating of the surfaces of the boulders. Because corals stop growing after being washed ashore, radiocarbon dating of their surfaces enables researchers to determine when the tsunami washed them ashore.

As a result of the radiocarbon dating, the research team concluded that tsunamis had hit this area every 150 to 400 years during the past 2,400 years.

The research team also examined Bari stone, the world's largest colony boulder measuring 9 m in diameter found on the east coast of Ishigaki Island, and identified that it was brought ashore by the Great Tsunami of Meiwa.

(The Okinawa Times, August 10, 2013)

Basic Data of the Great Tsunami of Meiwa

(Tsunami caused by the Yaeyama Earthquake)

Time and date:

Around 8:00 a.m. on April 24, 1771 (8th year of Meiwa)

Epicenter : (There are various hypotheses.)

Approx. 40 km east-southeast off the coast of Ishigaki Island

(Longitude: 124° 30' E, Latitude: 24° 00' N)

Magnitude: 7.4 on Richter scale

The earthquake triggered a massive tsunami. Reportedly, the ground motion itself caused only minor damage.

No. of deaths: Approx. 12,000

The disaster claimed the lives of approx. 9,400 people

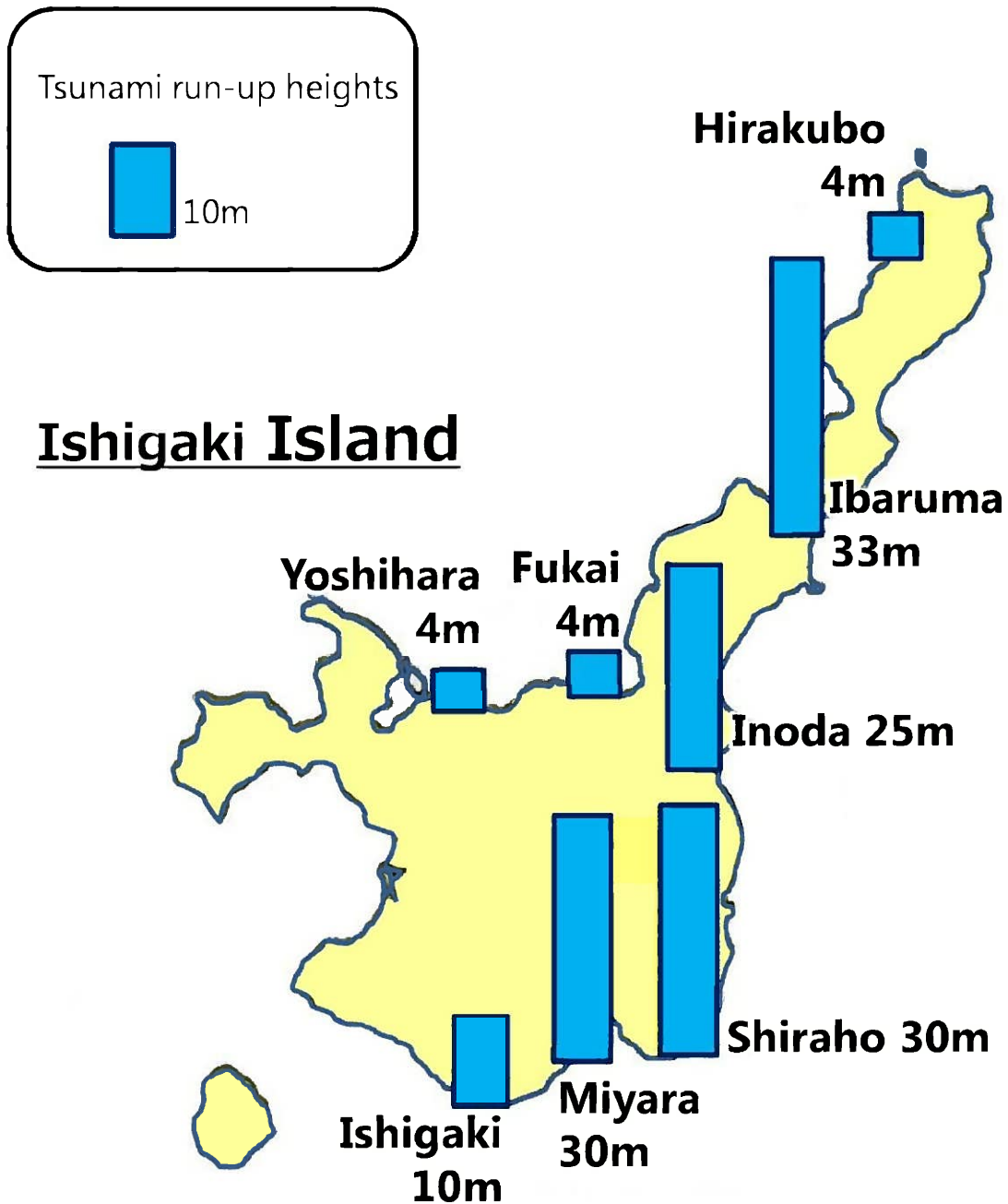
(in Yaeyama Islands, 48% of the population of Ishigaki Islands)

(approx. 2,500 people in Miyako Islands)

Outline of the Great Tsunami of Meiwa that struck Ishigaki Island on April 24, 1771

- Precursory phenomena observed before the tsunami: A huge earthquake; thunderous noise heard from the east; and abnormally low tide
- Course of the tsunami: The tsunami entered the inner part of Ishigaki Island along rivers and surged westward along the saddle, eventually flooding 40% of the island.
- Damage caused by the tsunami: The tsunami claimed the lives of 9,313 people, or 32% of the total population of the Yaeyama Islands, destroying 8 villages completely and 7 villages partially.
- Geographical change caused by the tsunami: The irregular coastline was covered with sand brought by the tsunami.
- Aftereffects of the tsunami: Famine that lasted for 80 years; epidemic of children's dysentery and malaria which caused a fall in population; sudden death of cows and horses due to a plague of blood-sucking flies; and reduction in food production due to loss of agricultural land

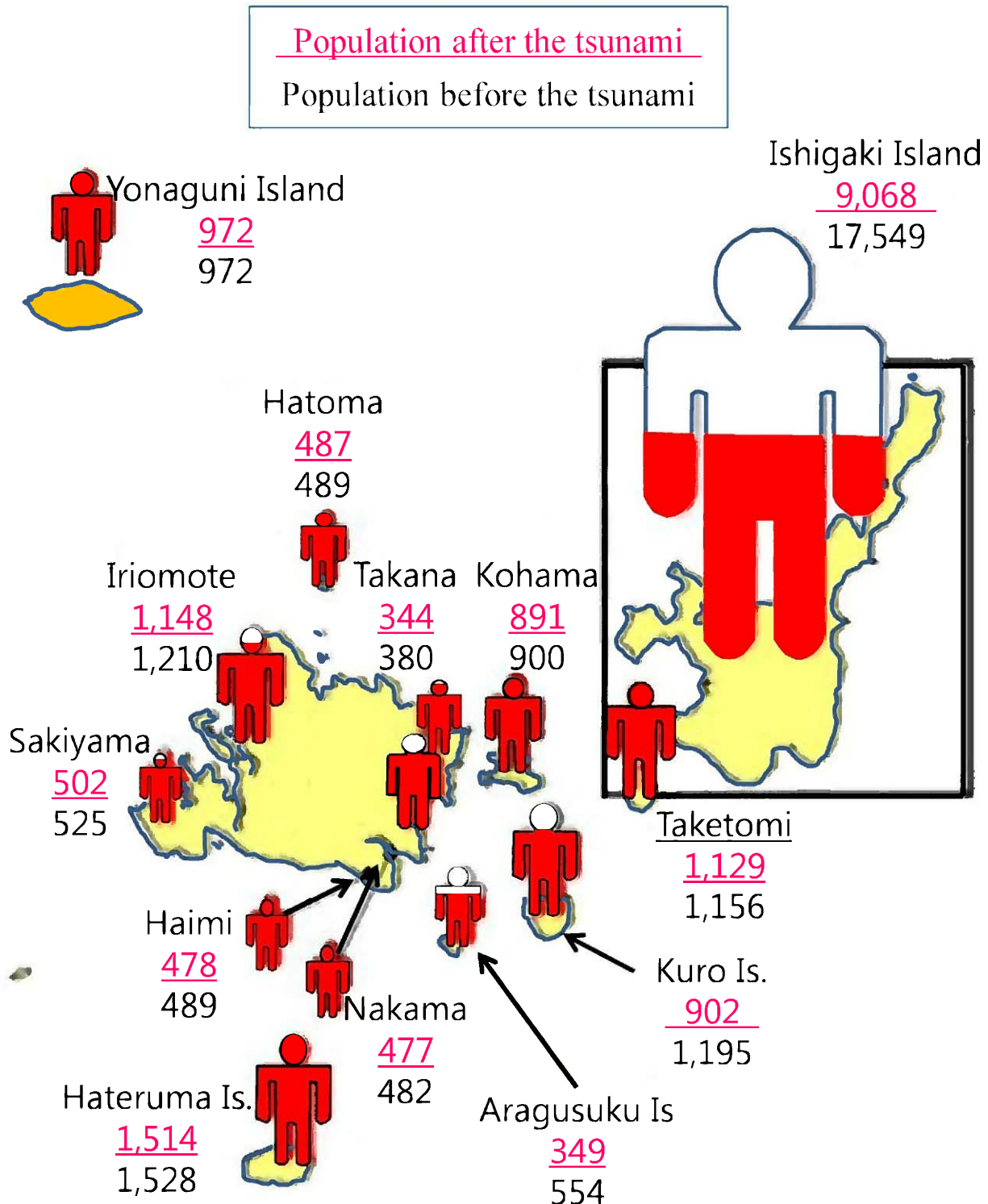
Run-up heights of the Great Tsunami of Meiwa



Immediately following the earthquake, various parts of the Sakishima region were hit by a giant tsunami. It is estimated that the run-up heights of the tsunami (the maximum heights that the wave reaches on land) were: more than 30 m in the area from the southeastern part of Ishigaki Island to its eastern coast; 4 m in the northwestern part of Ishigaki Island; 5 m in Kuro Island and Hateruma Island; 15 m in Tarama Island; and approx. 10 m in Miyako Island and its vicinity.

Cited from the website of Mamoru Nakamura's Laboratory (seismology),
Department of Physics and Earth Sciences, Faculty of Science, University of the Ryukyus

Human damage caused to the Yaeyama region by the Great Tsunami of Meiwa

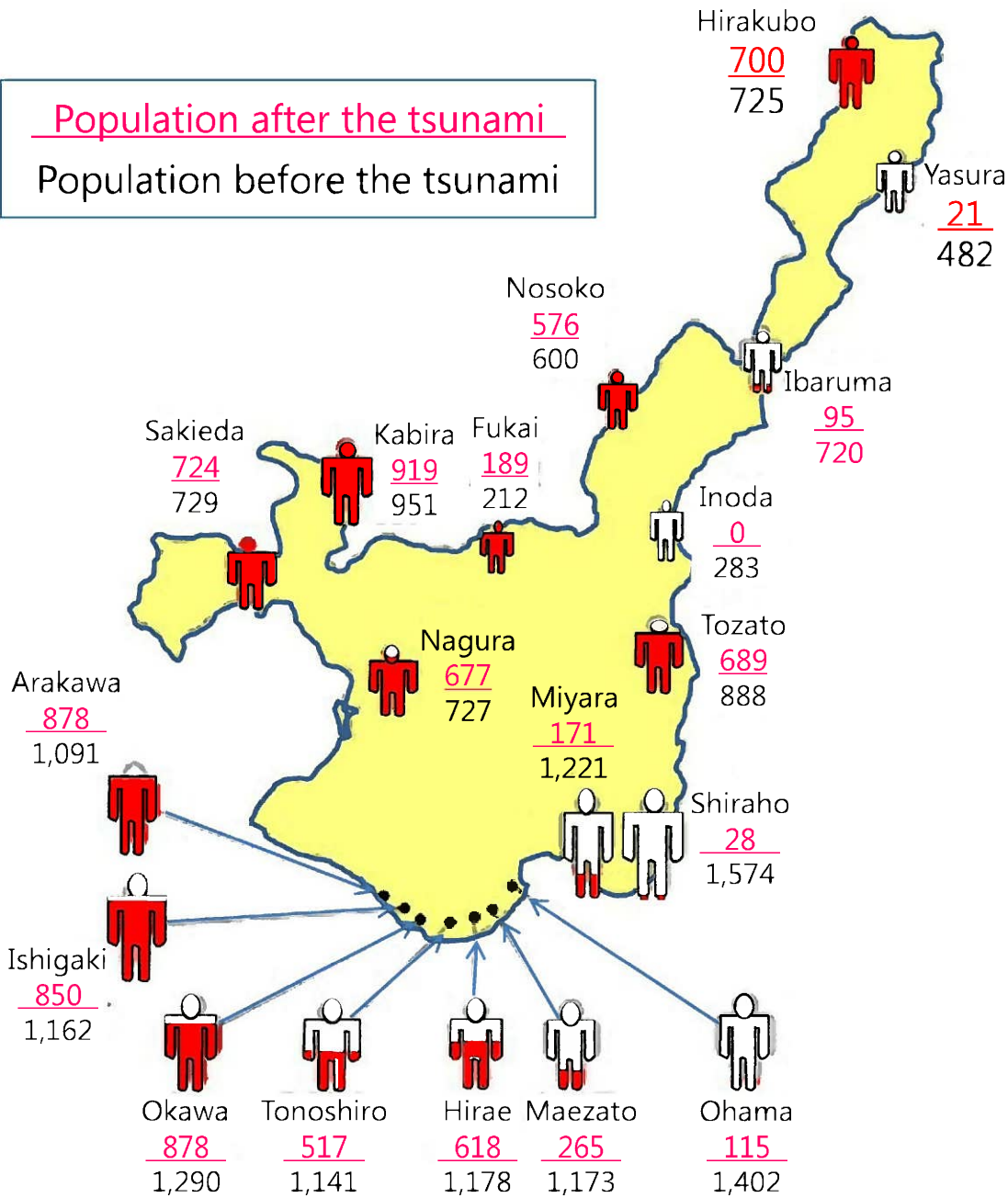


In the Yaeyama Islands, 9,313 people, equivalent to 32.1% of the entire population of 28,992, were killed by the Great Tsunami of Meiwa. (In Miyako Islands 2,548 lives were lost.)

Cited from the website of Mamoru Nakamura's Laboratory (seismology),
Department of Physics and Earth Sciences, Faculty of Science, University of the Ryukyus

Population distribution of Ishigaki Island immediately before and after the tsunami caused by the Yaeyama Earthquake (the Great Tsunami of Meiwa)

In the Great Tsunami of Meiwa, the area from the southern part to the eastern part of Ishigaki Island suffered especially serious damage. In detail, Ohama, Maezato, Miyara and Shiraho located in the area from the southern part to the southeastern part of the island lost 80 to 90% of their populations due to the tsunami, while Inoda, Ibaruma and Yasura in the northeastern part of Ishigaki Island lost 100%, 90% and 95%, respectively. On the other hand, the tsunami caused only minor damage to the northwestern part of Ishigaki Island; the residents who were killed were those visiting the southern part of Ishigaki Island.



Cited from the website of Mamoru Nakamura's Laboratory (seismology), Department of Physics and Earth Sciences, Faculty of Science, University of the Ryukyus

“Tsunami-ufuishi” - Ishigaki East Coast Tsunami Rocks

State-designated natural monument

Designated on March 27, 2013

The rock was named “Tsunami-ufuishi” by the late Kiyoshi Makino, a local historian. At first, Makino considered that the rock had been washed ashore by the Great Tsunami of Meiwa which wreaked havoc on Ishigaki Island and other areas in 1771. However, absolute dating of coral adhered to the surface revealed that the rock had been washed ashore to its current location by the Sakishima Tsunami about 2,000 years ago. Paleomagnetism research suggests that the rock was not moved significantly by the Great Tsunami of Meiwa but its terrestrial magnetism changed due to rolling by wave force, etc.

In total, five huge rocks which are considered to have been washed ashore or moved by the tsunami are located on the east side of Ishigaki Island: Tsunami-ufuishi, Takakoruseishi (Ohama), Amatariya-suuari (Tozato), Yasura-ufukane (Hirakubo), and Bariishi (Ibaruma). They are designated by the Japanese government as natural monuments: “Ishigaki East Coast Tsunami Rocks .”

The four huge rocks other than Tsunami-ufuishi have been confirmed to have been washed ashore by the Great Tsunami of Meiwa in 1771 based on an ancient document titled Onami no toki kakumura no nariyukisho (Records of Situation in Respective Villages at the Time of the Tsunami) and scientific analysis results (e.g., absolute dating).

June 2016
Ishigaki City Board of Education,
Cultural Assets Division



A memorial monument to victims of the Great Tsunami of Meiwa in Miyara, Ishigaki City

In 1771, the Great Tsunami of Meiwa hit Yaeyama Islands. The tsunami was caused by an earthquake southeast of Ishigaki Island, causing 9,313 fatalities or missing persons in Yaeyama.



Memorial monument to victims of the Great Tsunami of Meiwa

Inscription

According to a historical record in Yaeyama titled Onami no toki kakumura no nariyukisho (Records of Situation in Respective Villages at the Time of the Tsunami), an earthquake occurred at around 8:00 a.m. on March 10 in the 36th year of Kenryu (the eighth year of Meiwa in Japan) (April 24, 1771). The quake was followed by a roaring sound which resembled thunder in the east of Ishigaki Island. Soon thereafter, the tide ebbed to the reef, and high waves which gathered like dark clouds in the northeast and southeast sea swiftly hit the islands and villages. The high waves struck three times. They are historically known as the Great Tsunami of Meiwa which occurred in Yaeyama.

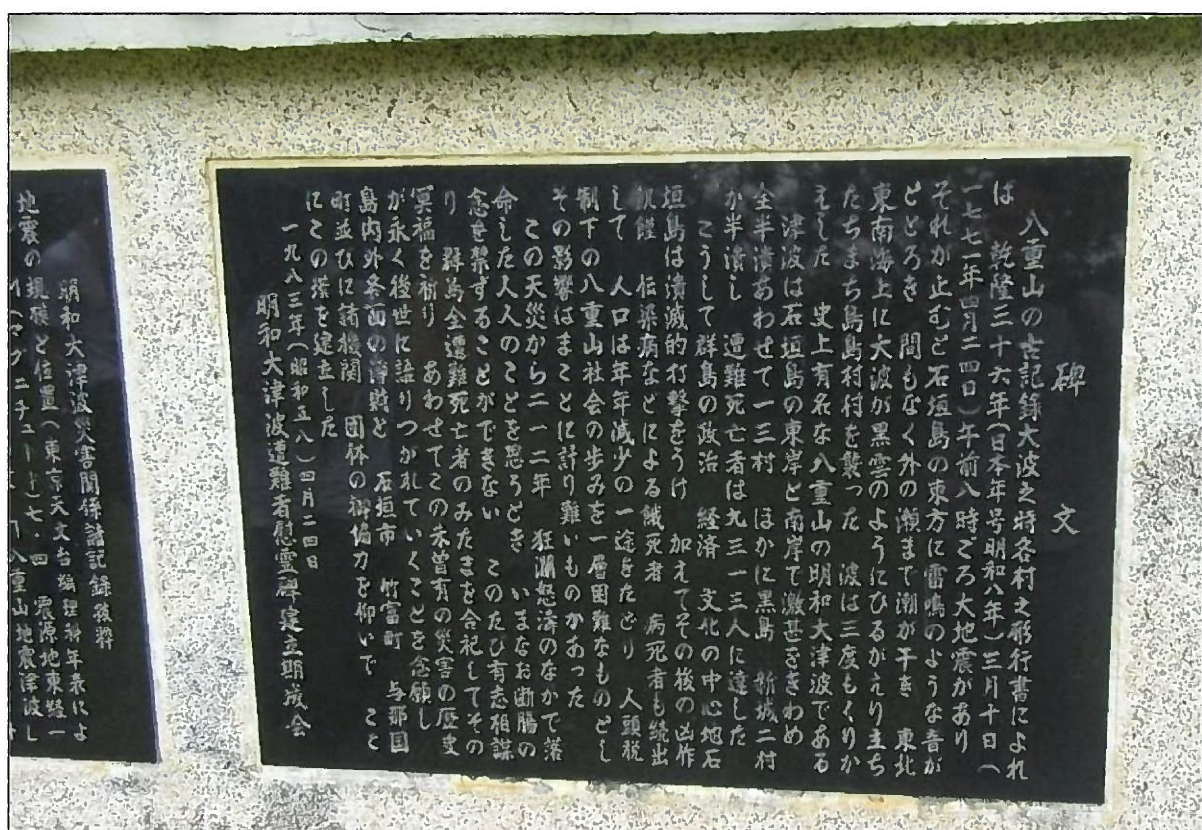
The tsunami wreaked havoc on the east and south coasts of Ishigaki Island. Thirteen villages were completely or partially destroyed. Two villages of Kuro Island and Aragusuku Island were also partially destroyed. The number of fatalities totaled 9,313.

Ishigaki Island, which served as the political, economic, and cultural center of the islands, suffered a devastating blow, and many people died later due to starvation and illness caused by poor harvests, famine, and infectious diseases. The population continued to decrease year by year, making it more difficult for the Yaeyama society to develop under the poll tax system. The tsunami had caused incalculable damage.

Two hundred and twelve years have passed since this natural calamity, and those who died in the tsunami and ensuing chaos are still mourned. We volunteers have erected this monument here with donations from in and outside the island and with cooperation from the City of Ishigaki, Taketomi Town Government, Yonaguni Town Government, and other organizations and groups to enshrine the souls of all the victims of the islands and pray for their peace; we hope that the lessons of this unprecedented disaster will be passed on to future generations.

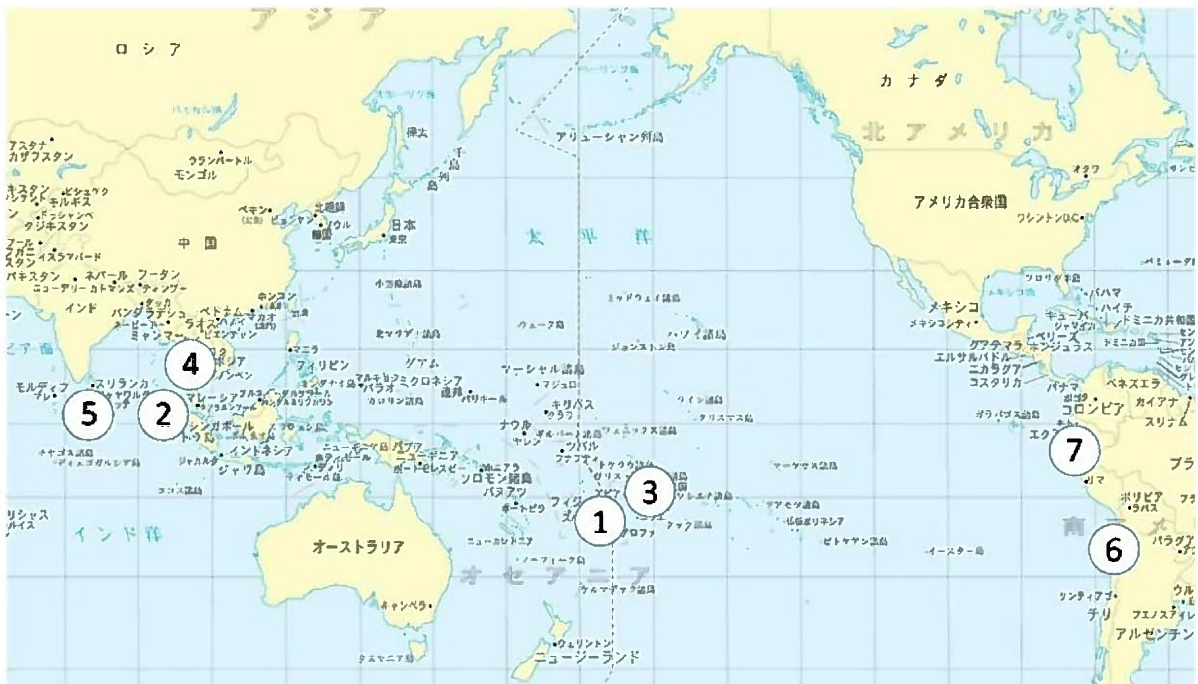
April 24, 1983

Association of volunteers to build a memorial monument to victims of the Great Tsunami of Meiwa



Traces and memorial monuments of great tsunami all over the world

No.	Overview	Overview of earthquake	No.	Overview	Overview of earthquake
1-1	One of the largest tsunami stones in the world (Kala'au, Tonga)	•thousands of years ago	2-5	A power generation ship hit by tsunami (Aceh, Indonesia)	Sumatra earthquake and Indian ocean tsunami •December 26, 2004 •Magnitude 9.1 •227,000 dead or missing
1-2			3	Memorial monuments of tsunami (Tafaigata in Upolu Island, Samoa) * established in 2000	Samoa earthquake •September 29, 2009 •Magnitude 8.1 •148 dead or missing
1-3			4-1	A ship hit by tsunami (Bang Niang, Thailand)	Sumatra earthquake and Indian ocean tsunami •December 26, 2004 •Magnitude 9.1 •227,000 dead or missing
1-4			4-2		
2-1	A fishing boat washed up onto housing (Aceh, Indonesia)	Sumatra earthquake and Indian ocean tsunami •December 26, 2004 •Magnitude 9.1 •Number of dead and missing: 227,000	5	Memorial monuments of tsunami (Galle, Southern province, Sri Lanka) * established in 2006	Maule earthquake and tsunami •February 27, 2010 •Magnitude 8.8 •521 dead or missing
2-2	A victim's gravestone and monument (Aceh, Indonesia)		6	Memorial monuments of tsunami (Constitution, Chile) * established in 2011	Ancash earthquake •May 31, 1970 •Magnitude 7.7 •70,000 dead or missing
2-3	* The gravestone began to be used soon after this earthquake. The monument was built gradually until 2012.		7-1	Debris of bus (Yungay, Peru)	
2-4	A hospital hit by tsunami		7-2	A church to commemorate the victims (Yungay, Peru) * established in 2017	



1-1



1-2

