

- [HOME >](#)
- [NEWS >](#)
- [WORLD](#)

NORTH AMERICA

N.E. is not immune, scientists warn

The Boston Globe

By Beth Daley, Globe Staff | December 28, 2004

Three hours after an offshore earthquake shook Canada in 1929, three giant ocean surges hurtled onto Newfoundland's coast at 78 miles per hour. Twenty-nine people were killed by the estimated 20-foot waves, and entire salt cod-fishing villages were dismantled as pulses from the tsunami reverberated as far away as Portugal.

Today, the Burin Peninsula disaster serves as a poignant reminder that eastern North America is not immune to the devastating force of a tsunami. Fearsome ocean surges of the kind that killed thousands in Asia this week are far more common in the Pacific, but they have the potential to cause widespread devastation along New England's coast.

"Just because they don't happen [that often] doesn't mean there is no risk or hazard to the New England coast," said Klaus Jacob, senior scientist at Lamont-Doherty Earth Observatory in New York. There are no records of a tsunami hitting New England's coast during modern times, and Jacob estimates that a tsunami of the strength that hit in 1929 has lower than a 1-in-1,000 chance of occurring in eastern North America in any given year. "Still, it can happen virtually anywhere along the North America coast," he said.

Because of the low probability, eastern North America does not have a system in place like the elaborate network along the Pacific coast that warns when a strong earthquake has the potential to produce tsunamis. Some scientists say that because of careful seismic monitoring, they will probably know when one is coming toward New England, but others say a warning system or public education campaign is needed to warn people to stay away from coastal areas if they feel tremors. In the Indian Ocean, devastating tsunamis are so rare, the last big one before Sunday's was in the 19th century, officials did not establish a warning system.

A tsunami is a series of extraordinarily large ocean waves caused by the sudden displacement of water by earthquakes or landslides on the ocean floor. Usually, the giant waves occur when earthquakes hit above magnitude 7 on the Richter scale, pushing walls of water outward from the epicenter with the speed of a jet plane. In the open, deep ocean, boaters probably wouldn't even notice if they are atop a tsunami. But as the giant wave hits coastal areas, the enormous energy underwater is transferred into the wave crashing on shore.

Scientists aren't exactly sure what causes some earthquakes off eastern North America. While there are hot spots of geological activity in some Caribbean areas and along the Mid-Atlantic Ridge 2,000 miles off New England, the swath of ocean floor is considered a relatively stable place in the North Atlantic plate. Still, earthquakes do occur, and some scientists



Tsunami in Asia

How to help

GRAPHICS

- [Seriously injured](#)
- [Aid pledges by governments](#)
- [Charities' role](#)
- [Making your money count](#)
- [Tsunami relief spending](#)
- [Rising toll](#)
- [Plate convergence](#)
- [Formation](#)

PHOTO GALLERIES

- [15 H0HHIRBWI-D011](#)
- [15 H0HHIRBWI-D011](#)
- [15 H0HHIRBWI-D011](#)
- [15 H0HHIRBWI-D011](#)
- [1' H0MWBP01-H011](#)
- [1' H0MWBP01-H011](#)
- [1' H0MWBP01-H011](#)
- [1' H0MWBP01-H011](#)

More:

- [More world news](#)
- |
- [Globe front page](#) |
- [Boston.com](#)

Sign up for:

- [Globe Headlines e-mail](#) |
- [Breaking News Alerts](#)

BOSTON.COM'S MOST E-MAILED

believe it stems from some unknown stress on the plate or perhaps a response to the release of pressure from the last Ice Age, 10,000 years ago.

"With the exception of a few areas, we don't have the same geology as the Pacific," said Robert Marvinney, Maine state geologist. "Still, there is no [coastal] place on earth where the risk is zero from a tsunami."

Scientists do know that the 1929 tsunami was triggered by a 7.2 earthquake about 11 miles below the seafloor south of the Burin Peninsula on the south coast of Newfoundland. It was felt as far away as New England and Montreal.

Twelve trans-Atlantic telegraph cables snapped in multiple places. More than 40 villages in Newfoundland were damaged, and the area also suffered the loss of livestock, fishing gear, ships, and 280,000 pounds of salt cod, according to historical reports. Property losses were estimated at more than \$20 million in 2004 dollars.

While underwater earthquakes can cause local tsunamis, enormous geological events elsewhere in the world may also send huge waves our way, much as this week's earthquake sent devastating waves 3,000 miles away. One London researcher contends that an unstable chunk of La Palma, a volcanically active island in the Canary Islands, could cause a catastrophic wall of water to hit the US East Coast if it falls into the sea.

"I'd worry a lot more about hurricanes [in New England] than tsunamis," said John Goff, a senior research scientist at the University of Texas.

Beth Daley can be reached by e-mail at bdaley@globe.com. ■

© Copyright 2006 Globe Newspaper Company.

5 (/ \$ 7 (' 16 7 2 5 . { 6

- ▶ [Nations rush aid, but seen falling short](#)
- ▶ **INDIA:** [In coastal towns, a torrent of grief](#)
- ▶ **AFTEREFFECTS:** [Huge quake resonates across oceans, continents](#)
- ▶ **DANGERS AHEAD:** [Up to half of victims may be children, officials say](#)
- ▶ **FIGHT AGAINST TIME:** [Unhealthy conditions ripe for disease](#)
- ▶ **THE MORGUE:** [Island reels as the dead add up](#)
- ▶ **A WORLD AWAY:** [For families and friends in Bay State, a difficult wait](#)
- ▶ **NORTH AMERICA:** [N.E. is not immune, scientists warn](#)

Ads by Google

[what's this?](#)

[Master's in Development](#)

A one-year master's- An innovative approach to measurement & analysis.
integraldevelopment.cua.edu

[Mobile Communication Vans](#)

Behaviour Change Communications to Fight the Poverty of Information
www.Agrivisual.com

More:

- [Globe World stories](#) |
- [Latest world news](#) |
- [Globe front page](#) |
- [Boston.com](#)

Sign up for:

- [Globe Headlines e-mail](#) |
- [Breaking News Alerts](#)

- [▶Landlord tax deductions, for beginners](#)
- [▶Too posh to push? More C-sections on demand in UK](#)
- [▶Natick luxury condo owners file lawsuit to get their money back](#)
- [▶Red Sox inadvertently honor Drew](#)
- [▶Review: La Citrueille Celeste de Citracado](#)

▶ [See full list of most e-mailed](#)

SEARCH THE ARCHIVES

GO

7RGD, IIIUH
<HAWUGD, IIIUH
3 DAWI IGD, V
/ DAWI I P ROW
▶ \$ GYOCFHQV-HURKII+ IWAUI\$ UKIYH/

ADVERTISEMENT