NANYANG TECHNOLOGICAL UNIVERSITY

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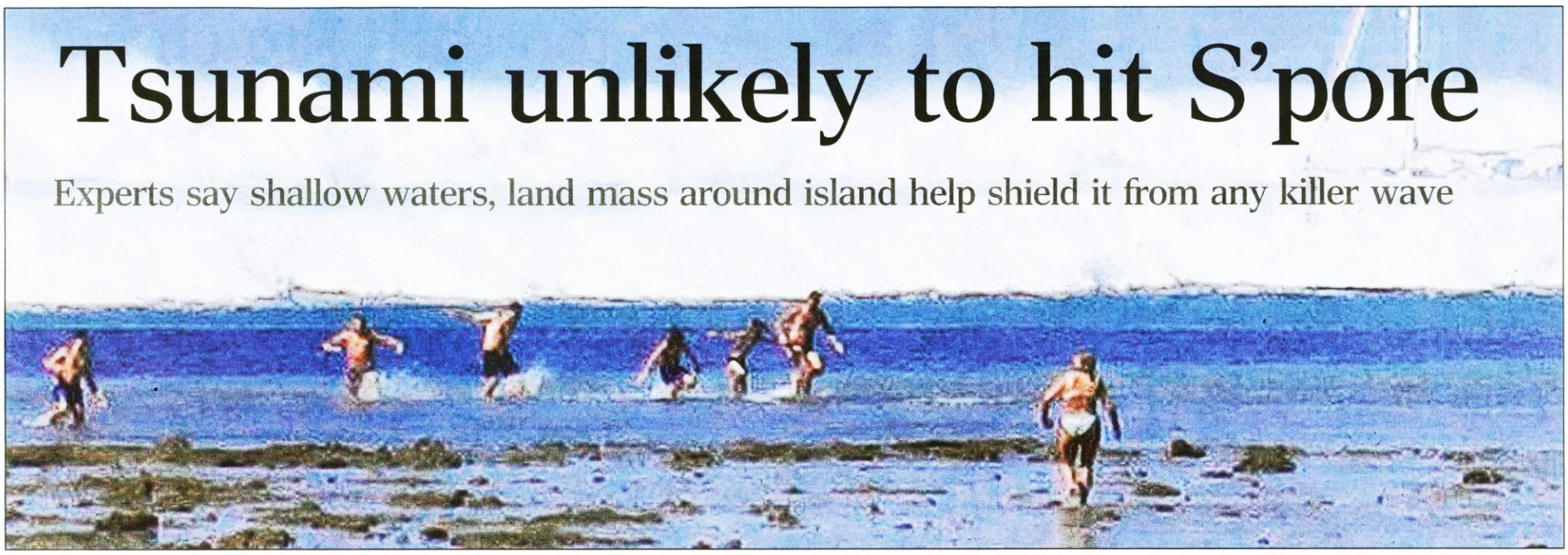
Tsunami unlikely to hit S'pore

Experts say shallow waters, land mass around island help shield it from any killer wave



A tsunami wave rolling towards Hat Rai Lay beach in Thailand in 2004. A 9.2-magnitude Indian Ocean earthquake triggered a tsunami that hit several countries, including Thailand, and killed more than 225,000 people. PHOTO: AGENCE FRANCE-PRESSE

BY MELISSA KOK

SINGAPOREANS who are concerned or fearful of a tsunami hitting the shores here can breathe easy.

This is because shallow waters and the land mass around Singapore protect the island, making it unlikely to be struck by killer waves, experts told The Straits Times.

Dr Pavel Tkalich, the head of Physical Oceanography Research Laboratory at the National University of Singapore (NUS), said there was no life-threatening risk of a tsunami in Singapore.

In theory, the largest "tsunami" that could ever reach Singapore is estimated at just 0.5 m tall – a height that is considerably less than the tidal range of between two metres and three metres sweeping through the Singapore Strait daily.

"If this ever happens, most people would not even notice," he said.

The only time Singapore would ever be hit badly by a tsunami would be if, for example, a massive submarine landslide struck along the Malacca Strait, creating a tsunami.

But the chances of that happening are probably as incredible as a meteorite hitting nearby waters, which would also generate a tsunami.

Singapore is located in the middle of the Sunda Shelf, which is a shallow water body, 100m to 200m deep.

The closest fault lines – which are potential sources for tsunamis – are located along the Sunda Arc in the Andaman Sea (600km from Singapore) and the Manila Trench off western Philippines (1,000km from Singapore).

Tsunamis generated by strong earthquakes that originate from other active seismic zones in the region are unlikely to affect Singapore, said Mr Foong Chee Leong, director-general of Meteorological Services at the National Environment Agency (NEA).

Assistant Professor Kusnowidjaja Megawati, principal investigator at Nanyang Technological University's Earth Observatory of Singapore, said the worst-case scenario for Singapore was if an earthquake of magnitude 9 struck along the Manila Trench.

But he said it would take about 12 hours for the tsunami waves generated to reach Singapore coastal waters. By then, the waves would be just 0.6 m high, hardly enough to raise Singaporeans' eyebrows.

Since 2004, there have been several earthquakes along the Sumatra islands of at least 7.9 magnitude. The strongest measured quake of 9.2 was in 2004, which created the Indian Ocean tsunami that killed more than 225,000 people.

Asked if the recent seismic activity along the Sunda Arc was a concern to Singaporeans about 600km away, Prof Kusnowidjaja said there was a strong chance that an earthquake with a magnitude of around 8.8 would strike in the area closest to the Mentawai Islands, off the western coast of Sumatra, in the next 30 years.

But he was quick to add that any tsunami created by the earthquake would have even less of an impact than the Manila Trench example, as Singapore would be shielded by the Sumatra islands.

Still, NEA's Mr Foong said Singapore's beaches could still be affected in the event of a tsunami.

That is why a Tsunami Response Plan was implemented in 2008.

The plan includes evacuation procedures to ensure the public leave unprotected beaches safely.

In addition, Mr Foong said Singapore participates in international tsunami exercises to test and fine-tune its operational readiness.

Last year, Singapore joined 17 other countries around the Indian Ocean Rim to test its tsunami warning system for the first time.

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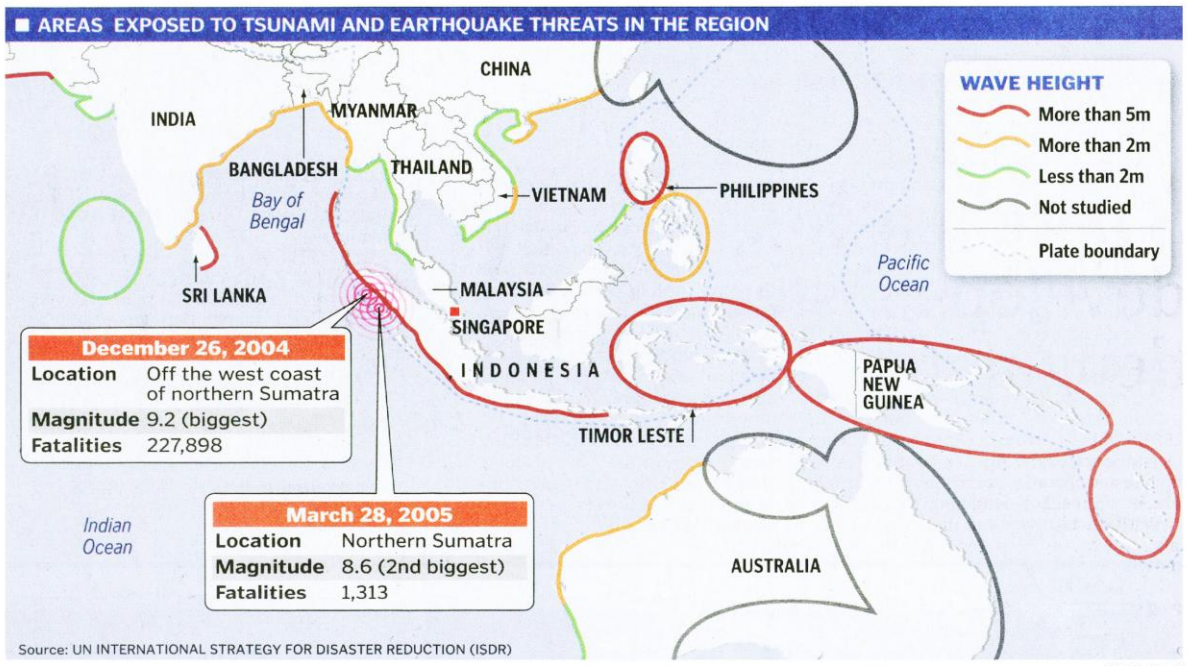

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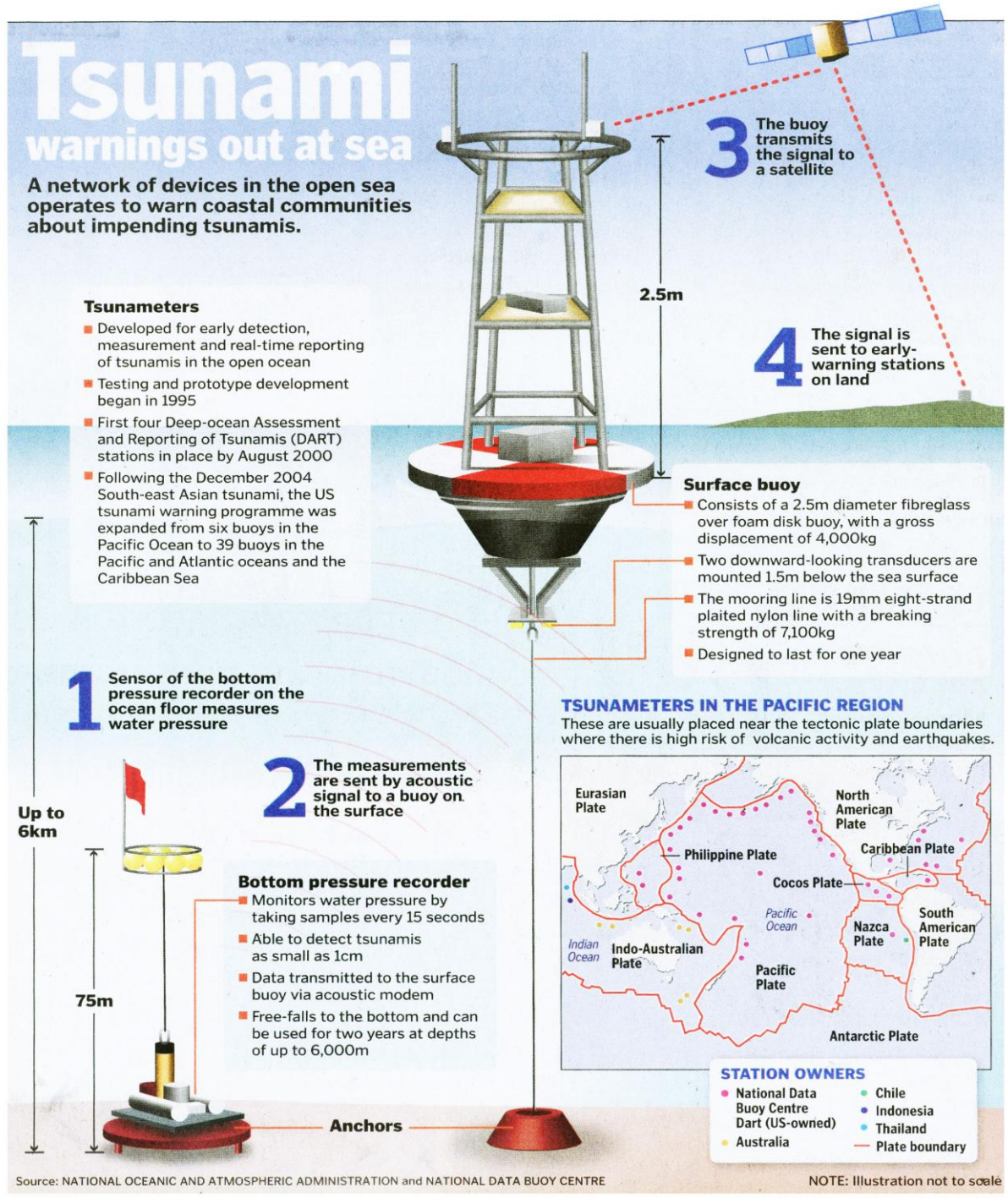

TEXT: JEANETTE WANG GRAPHICS: QUEK HONG SHIN

A boat marooned on a street in Chile. An 8.8-magnitude earthquake struck central Chile early last Saturday, triggering a tsunami that hit several coastal communities. PHOTO: ASSOCIATED PRESS