



# SHAKY GROUND

Few prepared for  
**sleeping monster**  
that could awake  
at any time

**Paul Luke**

SUNDAY  
FEATURES



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University of Victoria environmental psychology professor Robert Gifford has stockpiled a case of 12 cans of beans in his basement in case a big earthquake strikes coastal B.C.

Well, there used to be 12 cans, but Gifford got hungry and ate two of them. The rest have been sitting around so long his partner worries they may have gone bad.

The self-deprecating Gifford is quick to admit that his token preparation for the Big One is inadequate.

Gifford calls tokenism a “dragon of inaction” — a psychological barrier that prevents people from preparing for disasters such as earthquakes.

Sechelt-based earthquake authority Jerry Thompson calls the risk of a mega-quake off B.C.’s coast a sleeping monster that could awake at any time. This monster’s destructive power, he says, will be swelled by the drag-

ons of denial that keep the province’s citizens from preparing for the shaker they know in their bones is coming.

It’s a scene of mass apathy that has left experts like Thompson deeply worried.

Corporations, employers and government have been, to varying degrees, making plans to cope with natural disasters, they say.

But most individuals and families in B.C. are sitting on their hands when it comes to planning for quakes and tsunamis — as well as other disasters such as storms, fire and flood, says Dee Miller, president of F.A.S.T. Ltd., a first aid and survival-gear manufacturer in Delta.

“It may not be the Big One, but the likelihood of having to deal with a major disaster in your lifetime is pretty high,” says Miller, who co-founded F.A.S.T. in 1988.

“People don’t even have a basic plan. They’re better educated

about disasters but more apathetic.

“That worries me a lot. There will be suffering. I’m really concerned about marginalized people such as the elderly.”

Catastrophes around the world hardly stir a ripple of interest among B.C. residents in buying F.A.S.T.’s emergency kits, Miller says. The 2011 earthquake that slammed Christchurch, New Zealand saw no blip in sales at all. The quake-tsunami less than a month later in Japan triggered only a small spike.

“The vast majority of people in B.C. have not prepared. They may have some bottled water and food but don’t have adequate supplies,” says Brian Fong, president of Burnaby-based 72 Hours, which sells emergency preparedness products.

“People make a New Year’s resolution to get ready. Something else comes up and they totally forget about it.”



**“What happened in Sumatra in 2004 will happen to North America, beyond any reasonable scientific doubt ... A nearly identical earthquake will rattle the West Coast and a train of killer waves will tear across the Pacific.”**

— JERRY THOMPSON  
EARTHQUAKE AUTHORITY

Recent immigrants to B.C. are often less aware of the risks of natural disasters than longer-term residents who have been exposed to repeated warnings from government and schools, Fong says.

B.C.'s Pacific coast is the most earthquake-prone area of Canada, Natural Resources Canada says. More than 100 quakes of at least magnitude 5 have occurred over the past 70 years.

B.C. as a whole has had 331 quakes of at least magnitude 1.5 over the past year, according to earthquake-track.com.

B.C. residents may be in a state of delusion about their physical and financial preparedness for a disaster such as a destructive quake.

Two-thirds of B.C. and Quebec residents are confident they're financially ready for an earthquake, according to a survey released in October by the Insurance Bureau of Canada. Yet only 31 per cent of those surveyed have earthquake insurance and half had never heard of earthquake insurance.

B.C. residents are concerned about earthquakes but see them as a far-off possibility. Most believe a quake won't hit their area for another 50 years, the survey found.

That could be a big mistake. Experts say a big quake in B.C. is “a looming catastrophe” — a matter of not “if” but “when.” Scientists can't pinpoint when but say it could strike in a few hundred years — or tonight.

There's at least a 30-per-cent chance that an earthquake “strong enough to cause significant damage” will smite B.C.'s coast over the next 50 years, according to a separate report prepared for the insurance bureau. A 9.0-magnitude quake 75 km off the west coast of Vancouver Island could cause \$74.7 billion in damages from the quake and its dance partners — tsunami, fire, liquefaction and



Dee Miller, whose company F.A.S.T. Ltd. manufactures survival gear, says the likelihood ‘is pretty high’ of major disaster in your lifetime. ‘People don’t even have a basic plan,’ she says. PHOTOS: NICK PROCAYLO/PNG

landslides, the report found.

Separate studies estimate economic losses in Washington and Oregon of almost \$80 billion US. The death toll in the U.S. could reach 10,000, science journalist Sandi Doughton says in her book Full-Rip 9.0.

“The economy of North America would be staggered for a decade easily,” Thompson says.

The monster poised to unleash a mega-quake is the Cascadia subduction zone, an offshore crack in the earth's crust running 1,300 km from northern Vancouver Island to Northern California.

Thompson, author of the 2011 bestseller *Cascadia's Fault*, says the Cascadia zone is almost identical to the offshore Sumatran fault that ruptured in 2004, triggering a lethal tsunami.

“What happened in Sumatra in 2004 will happen to North America, beyond any reasonable scientific doubt,” Thompson writes. “A nearly identical earthquake will rattle the West Coast and a train of killer waves will tear across the Pacific.”

Dec. 26, 2014 marked the 10th anniversary of the 9.3-magnitude quake and tsunami that killed about 228,000 people. But the anniversary to which West Coast residents should pay close attention is Jan. 26, Thompson says. At about 9 p.m. on that day in 1700, a magnitude 9.0 mega-thrust quake — when a plate, or chunk of crust, slides beneath another plate — hit B.C. It sparked a tsunami that wiped out aboriginal villages on the West Coast.

Scientists believe such monster

quakes at the northern end of Cascadia recur every 480 years or so — which means the next one is getting close.

“It will send crippling shock waves across a far wider area than all the California quakes you've ever heard about,” Thompson writes.

“Cascadia's fault will slam five cities at once: Vancouver, Victoria, Seattle, Portland and Sacramento.

“(It) will cripple or destroy dozens of smaller towns and coastal villages from Tofino and Ucluelet on Vancouver Island to Crescent City and Eureka in Northern California.”

Thompson sees recent signs of progress by governments in bracing for a disaster of this scale but says they're not nearly enough.

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## Can you be self-sufficient for 72 hours?

Paul Luke  
SUNDAY PROVINCE

➤ People should prepare for natural disasters such as earthquakes by keeping an emergency kit in their home, car and workplace, Emergency Planning B.C. says.

➤ Each person should have enough water, food and items such as a battery-powered radio, blankets and extra clothing to be self-sufficient for 72 hours after an emergency.

➤ Families should devise a plan covering how members will contact each other if they're separated when a quake strikes.

➤ Families should agree in advance on a meeting place and an out-of-area contact person to whom they can report that they are safe.

➤ Take a first aid course, including CPR.

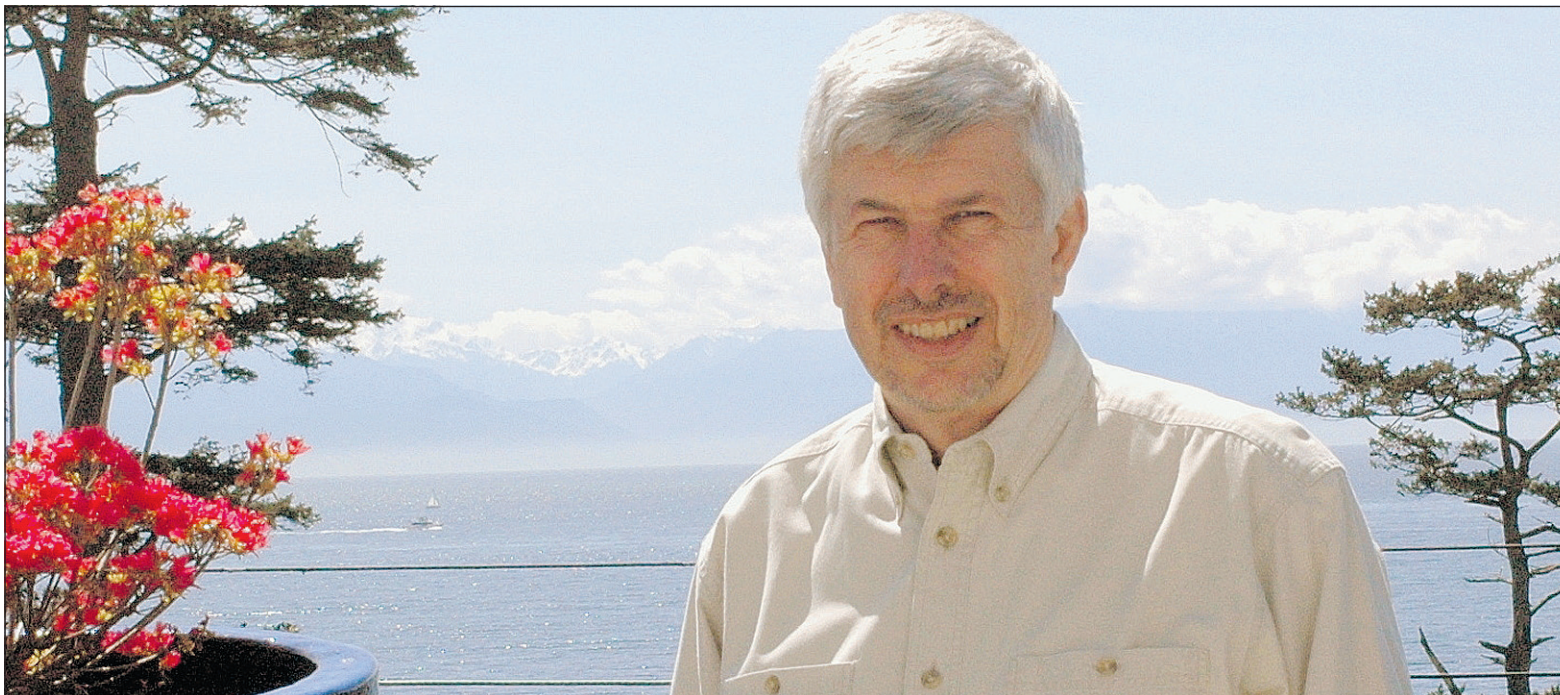
➤ Know the safe and dangerous places in your home.

For more information on how to prepare for a quake, see [embc.gov.bc.ca/em/hazard\\_preparedness/earthquake.pdf](http://embc.gov.bc.ca/em/hazard_preparedness/earthquake.pdf)



First aid and survival necessities are shown at F.A.S.T. Ltd.'s manufacturing and assembly area in Delta. Company president Dee Miller says people are too apathetic about the potential of a disaster striking.





University of Victoria environmental psychology professor Robert Gifford calls the psychological barrier that prevents people from preparing for disasters such as earthquakes the 'dragon of inaction.' NICK PROCAYLO/PNG

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"Federal and provincial emergency planners in British Columbia are laughably under-equipped and underfunded," he writes.

"There will be no cavalry racing over the hill to save the day, no government white knights to bail anybody out. It'll be every man, woman and child for themselves."

Last March, a B.C. auditor general's report said Emergency Management B.C., the agency charged with leading B.C.'s response to a quake, has been inadequately funded and can't handle the impacts of a catastrophic quake.

A B.C. justice ministry spokesman says work has been completed on two of the report's nine recommendations and is underway on the remaining seven.

Thompson argues that anyone who has lived in the Northwest for a while knows deep down that a mega-thrust will eventually happen.

But most of us bury that knowledge beneath more immediate challenges and "hope the future never comes," he says.

"People are in deep denial," Thompson says.

"They have plenty of other things to worry about: Will I lose my job? Can I pay the mortgage next month? Will the parasites on Wall Street suck my pension fund dry?"

Repeated warnings about killer quakes create disaster fatigue, resignation and inertia. Earthquakes become just another threat like asteroid strikes, terrorist attacks and deadly plagues, Thompson says.

"So many things might happen, people tend to shut down or say 'C'est la vie, what will be, will be.'"

John Clague, director of the Centre for International Hazard Research at Simon Fraser University, says people are sensible to prioritize hazards.

The risk of injury in driving cars is far greater than being caught in natural disasters, which are infrequent, he says.

The rarity of major quakes makes personal preparation "a bit of a hard sell," Clague says.

Taken as a whole, however, disasters such as storms, quakes, floods and fires are not so rare in B.C., Clague says.

And a destructive quake could leave those who have not bothered to plan in a rubble heap of trouble.

"A lot of people would not have a clue if an event like this happened," Clague says. "It's not just over when the shaking stops and you realize you survived. You've got to deal with the health, social and economic manifestations."

"You don't know where your kids are. What happens if you can't reach your place of employment or your business goes down?"

A big quake in B.C. is inevitable but scientists can't pinpoint when it will occur, Clague says.

"If you look at most subduction zones, they're not uniform. They don't go off like clockwork every 500 years," he says.

B.C. residents seize on this unpredictability to feed their dragons of inaction, Gifford says. People unsure about whether something bad will happen often cope by becoming optimistic. They tell themselves it likely won't happen to them and carry on as they did before, he says.

"Uncertainty always leads to taking the same road, or the self-inter-

est road or the non-action road," Gifford says.

What does it take to motivate the province's residents into preparing for a disaster?

Miller believes it will take "a near miss" — a quake that shakes people enough to get their attention.

Gifford says people are capable of thinking ahead. But the human brain's default position — a position set as our ancestors struggled to survive on the African plain some 30,000 years ago — is to focus on what is in front of it, he says.

"So one solution is to somehow make (the risk) here and now," he says. "Which is hard."

Earthquake watchers such as Thompson are careful to avoid scaremongering when they issue warnings about the looming Big One. But Gifford suggests arousing modest fear in individuals may be effective.

It's an approach that worked with anti-smoking campaigns a few decades ago, he says.

"You want to frighten people, but not too much," he says. "If you overdo it, people will just say it doesn't affect me and won't do anything."

## Beware these 'Dragons of inaction'

Many B.C. residents believe a major earthquake or other disaster is coming, but do little or nothing to prepare. What's that about?

University of Victoria environmental psychologist Robert Gifford says this inertia is caused by "dragons of inaction" — inner barriers that block people from preparing for disaster.

Of the roughly 30 dragons of inaction that inhabit people's minds, Gifford identifies seven that keep individuals from getting ready for a natural calamity such as an earthquake:

- The dragon of uncertainty. It often justifies inaction or postponed action.
- The dragon of judgmental discounting. A disaster will happen later, or elsewhere, so there's no need to do anything.
- The dragon of habit. This beastie is also known as Behavioural Momentum. Many habitual behaviours are resistant to change, or change slowly.
- The dragon of conflicting goals. "I have other more immediate things to do."
- The dragon of optimism bias. "It won't happen, at least to me, at least not soon."
- The dragon of tokenism. People take the easiest steps to prepare for disaster rather than the most effective.
- The dragon of conformity. If no one else in your neighbourhood is preparing for an earthquake, you likely won't either.

# Aware yet under-prepared

Knowing you face a greater risk of an earthquake is one thing. Doing something about it is another.

People living in areas of Victoria at higher risk of earthquake damage are no more likely to prepare themselves for a quake than residents of lower-risk zones.

That's one of the findings of two researchers who surveyed Victoria residents last fall about their perception of earthquake risk.

Zahra Asgarizade, a visiting PhD student from Tarbiat Modares University in Tehran, and University of Victoria environmental psychology professor Robert Gifford are crunching the results of interviews with 100 people in higher- and lower-risk zones of the city, based on geological setting.

The study, which Asgarizade suggested and for which she did most of the data gathering, found the res-

idents of the higher-risk zone were, on average, more aware of their risk. But they were no more inclined to have done anything about it than those in less-risky areas.

The typical respondent claimed to have carried out about seven or eight of some 16 actions listed by Asgarizade and Gifford to ease the impact of a quake.

"Based on other studies, I would guess that less was done than

claimed," Gifford says.

Asked how much a big quake would threaten their lives, respondents answered, on average, "slightly."

The findings come as no surprise to Gifford.

"I would be surprised if I believed that people were rational — for example, 'I am at risk, so I will take more precautions' — but I do not believe we are rational," Gifford says. "Of course, some people are rational but

across a broad sample, we are not."

Asked when they thought the Big One would strike, about 40 per cent said within 50 years, about 40 per cent said within 100 years, 10 per cent said within 10 years and about seven per cent said more than 100 years.

Gifford speculates that people's perception of timing would be similar in Vancouver and elsewhere in the province.