

Appendix A: News Articles/Stories/Social Media from release.

Media Counts

Facebook	159,313 impressions
Twitter	18,000 impressions
Linked In	9,494 views
Website hits	Over 2,000 page views of volcanic infographics page in first week of publication

Taranaki Daily News Article 29 January 2022

Latest modelling of Taranaki Maunga eruption released

Glenn McLean 05:00, Jan 29 2022



SIMON O'CONNOR/STUFF

Ashfall from a Taranaki Maunga eruption is considered the biggest danger.

Widespread ashfall from the next eruption of Taranaki Maunga has been identified as the greatest hazard for residents in the region after new modelling research.

Several new GNS Science infographics have been released by Civil Defence's Taranaki Emergency Management team after research from Auckland, Canterbury and Massey universities highlighted the main dangers associated with an eruption – ashfall, lava flows, ballistics, gases and avalanches.

Taranaki Maunga ASHFALL FROM TARANAKI

Taranaki Maunga is a cone volcano, like its close neighbour Ruapehu. Taranaki and Ruapehu. Cone volcanoes can produce ashfall affecting areas near and far away.

What is Ashfall?

- Ash is the small rocks and glass fragments which erupt out of the volcano forming an ash cloud.
- Over time, the ash cloud is spread by the wind and ash particles fall to the ground.
- Ash in the air can cause breathing difficulties, but is not usually fatal.
- Ashfall can be very disruptive to infrastructure and daily life.

Where will ash fall?

Ash could fall anywhere in the region during an eruption.

Areas impacted by ashfall will depend on the wind direction

If an eruption is ongoing, GeoNet will provide information on ash fall at: www.geonet.org.nz

Wind controls the direction of ashfall.

The larger and heavier ash particles fall closer to the volcano, that are the lighter ash particles fall further away from the volcano.

Thicker ash layer

Thinner ash layer

Closer to Taranaki

Further away

What should you do if ash is falling?

If you are WITHIN the ashfall area:

- Stay indoors, don't drink and follow advice from official sources. Seek shelter in a basement or cellar.
- Close all doors and windows, and seal up to the outside.
- Wear a face mask if you need to leave your home.

If you are AWAY from the current ashfall area:

- Keep up to date with the latest official geonet.org.nz

Main impacts

People and animals

Breathing volcanic ash can cause discomfort and may have more serious health effects for some people and animals. Ashfall can make it hard to see outside.

Infrastructure

Ash can damage power lines, water supplies, farming and crops. The weight of very thick ash can collapse some types of buildings.

Be prepared for ashfall

- Know your distance and direction from the volcano, so you can understand how an eruption could impact you.
- Ashfall could keep you stuck at home for days. Keep stock and emergency household supplies including water for 2 days' supply.
- Wash your face and wear eye protection to your emergency supplies.

More information

For more information on ashfall, visit www.tki.govt.nz/ashfall

See the video series from Taranaki Emergency Management on www.tki.govt.nz/ashfall and on the TVNZ app.

Check www.geonet.org.nz for monitoring, updates and the current volcanic alert level.

During volcanic activity follow the www.tki.govt.nz/ashfall provided by Taranaki Emergency Management, Department of Conservation and emergency services.

Version 1.0 2020

STUFF

Ashfall would cover a large area.

They illustrate a potentially catastrophic event which would severely impact lives.

“The biggest risk is probably ashfall,” Taranaki Civil Defence manager Todd Velvin said.

“Ashfall is going to cover a lot of the region, depending on the wind direction, and that can be really detrimental to your health.

“We do have big nasty things like pyroclastic flows that come out of the mountain, but they don’t necessarily travel to places like Stratford, Hāwera, Opunake and New Plymouth. It’s more the ashfall and the impact on your health, our roading, our infrastructure and our water.

“That will have significant consequences for us.”



ANDY JACKSON/STUFF

Taranaki Civil Defence Emergency Regional Manager Todd Velvin says they continue to learn about potential scenarios associated with an eruption.

Taranaki Maunga LAHARS FROM TARANAKI

Taranaki Maunga is a cone volcano. Like its distant neighbours Ruapehu, Tongariro and Ngauruhoe, some volcanoes may experience lahars during or after an eruption.

Floods of ash, mud, water and debris

LAHARS

What are lahars?

- Lahars are fast moving floods of ash, mud, water and debris that flow down valleys and gullies.
- They look like rivers of wet concrete that change size and speed.
- Lahars are **deadly and highly destructive** to anything in their path.
- They can occur during or long after an eruption has stopped, usually following heavy rain.

Where do they occur?

Lahars can happen in valleys in New Zealand.

They happen in valleys and river channels flowing away from Taranaki Maunga.

Lahars may **not** occur in all valleys of the cone area.

They can also occur in some of the valleys of the cone.

Know the lahar zones:

This map shows which areas are more likely to experience lahars during or after a future eruption.

The red zones show the **Highest Risk** and follow the main valleys.

Zones are based on where lahars have occurred in the past.

What should you do if you see, hear or are warned of lahars?

If you are WITHIN lahar zones:

- Get to higher ground as quickly as possible.
- Evacuate the area safely if you are told to do so.

If you are AWAY FROM lahar zones:

- Stay indoors, you are unlikely to be evacuated as a result of lahars.
- Stay informed. Listen to the radio, or follow official updates on social media.

Main impacts

People and animals
If you are in a lahar zone you could be swept into the lahar and drown. Do not swim in a lahar. Sticks and debris in the lahar can cause injury or death.

Infrastructure
Lahars can damage and destroy buildings, roads, bridges, telelines, power lines and phone lines.

Be prepared for lahars

- If the volcano is active, stay away from valleys, especially if rain is forecast.
- Be ready to move out of affected valleys if a lahar warning is issued.
- Practice your emergency plan, know your zone, make a grab bag and have emergency supplies.

More information

See the whole series from Taranaki Emergency Management at www.taranaki.govt.nz or visit www.210cc.co.nz

Go to www.govt.nz for information on emergency services and the current volcanic alert level.

During volcanic activity 24/7 a 24/7 helpline is provided by Taranaki Emergency Management, Department of Conservation and emergency services. **Number 08 9382**

Identify where you live and where the zones are in relation to the things you care about.

Lahar zones

- Highest Risk
- Medium Risk

TARANAKI CIVIL DEFENCE

An eruption would create lahars – floods of ash, mud, water and debris.

Velvin said the modelling gave them a better insight into where those collective hazards could reach.

“Some of it is the same science that existed 10 years ago, but we are learning things day by day,” he said.

While it was a “million-dollar question” to predict the variables between modelling and what could actually happen, Velvin said Tonga’s Hunga-Tonga-Hunga-Ha’apai volcano highlighted the widespread effect of any eruption.

“Mother nature can always throw up a lot of different scenarios and we saw that from the tsunamis associated with Tonga which went a lot further than traditional volcanic causing tsunamis,” he said.

New Poster Series to Help Build Resilience in Taranaki

By Jenny Stein

Last month the Taranaki Civil Defence and Emergency Management Group Office (TEMO) published a series of posters about volcanic processes associated with Taranaki Maunga. With contributions from Resilience Challenge researchers and funding from the National Emergency Management Agency (NEMA), GNS Science, and the Transitioning Taranaki to a Volcanic Future Endeavour Project, the posters address misconceptions about the risks associated with the volcano and deliver key messages about how to stay safe in the event of an eruption.

“The region wouldn’t exist without the volcano,” explains Teresa Gordon, an analyst at the TEMO office who initiated the poster development project. “But there’s potential for quite a bit of disruption if the volcano goes up, and that would affect the whole country, not just the region.”

Although it has not erupted in living memory, Taranaki Maunga is an active volcano and the TEMO’s top priority for response planning for the future. Teresa wanted to make a poster series that would provide people with the information they needed to meaningfully engage in the response planning process, rather than just assuming there was nothing they could do if the volcano were to erupt.

“Resilience comes from self-agency,” Teresa says. “People become resilient when they believe that they can make a difference through their individual actions.”

Communicating what those actions should be required breaking down the complex nature of a volcanic eruption into different processes, each with their own ranges of potential impact and risk in different areas and over different periods of time. Each process then became a separate poster in the series, all informed by decades of scientific research.

2 Taranaki Maunga
LAHARS FROM TARANAKI

Taranaki Maunga is a cone volcano, like its distant neighbours Ruapehu, Tongariro and Ngauruhoe. **Cone volcanoes may experience lahars during or after an eruption.**

What are lahars?

- Lahars are fast moving floods of **ash, mud, water and debris** that flow down valleys and channels.
- They look like **rivers of wet concrete** that change size and speed.
- Lahars are **deadly and highly destructive** to anything in their path.
- They can occur during or long after an eruption has stopped, usually following **heavy rain**.

Where do they occur?

They happen in valleys and river channels flowing away from Taranaki Maunga.

Lahars may **not** occur in **all** valleys at the same time.

They can jump valleys and reach all the way to the coast.

What should you do if you see, hear or are warned of lahars?

If you are WITHIN lahar zones:

- Get to higher ground** as quickly as possible.
- Evacuate the area safely** if you are told to do so.

If you are AWAY FROM lahar zones:

- Stay indoors**, you are unlikely to be evacuated as a result of lahars.
- Stay informed**. Listen to the radio, or follow official updates on social media.

Main impacts

- People and animals**: If you are in a lahar zone you could be swept into the lahar and drown. **Do not swim in lahar**. Rocks and debris in the flow can cause injury or death.
- Infrastructure**: Lahars can **damage and destroy** buildings, roads, bridges, farmland, power lines and phone lines.

Be prepared for lahars

- If the volcano is active, stay away from valleys, especially if rain is forecast.
- Be ready to move out of affected valleys if lahar warnings are issued.
- Practice your emergency plan, know your zone make a grab bag and have emergency supplies.

More information

See the whole series from Taranaki Emergency Management at cdem.taranaki.govt.nz or scan the QR code.

Go to geonet.org.nz for monitoring, updates and the current Volcanic Alert Level.

During volcanic activity follow official advice provided by Taranaki Emergency Management, Department of Conservation and emergency services.

Version 1.0 2022

Lahar zones

- Highest likelihood
- Moderate likelihood

The map does not show the exact areas which will be impacted in the future eruption. Lahars can also flow through the valleys on this map and beyond some map change without notice.

A poster about lahars from Taranaki Maunga; one of six posters in the series. Credit: TEMO

“You have to distil down 30 years’ worth of work, hundreds of papers, all that information into a couple of posters. So that’s a hard job,” says Jon Procter, the lead science advisor on the project. A Professor of Natural Hazards at Massey University and Co-Leader of the Resilience Challenge’s Volcanoes programme, Jon says the biggest challenge was making sure that all the people contributing to the project were on board with the same clear and accurate messages about volcanic phenomena. “You just really want those simple key messages that are accurate and presented in a way which could be relevant to everyday people,” Jon says.



Public focus group mapping exercise. Credit: Danielle Charlton, GNS Science

To ensure their information was relevant to their target audiences, the poster development team conducted focus groups with council staff and the general public and found that people wanted to know two things: what they could do to keep themselves safe during an eruption, and what the impacts of that eruption would be.

“Starting off with that user perspective is not that common, so we were glad to bring that in, not just right at the end, but from the beginning,” says Danielle Charlton, a Hazard and Risk Management Scientist with GNS Science, who oversaw and led the design of the posters. To ensure that information was presented

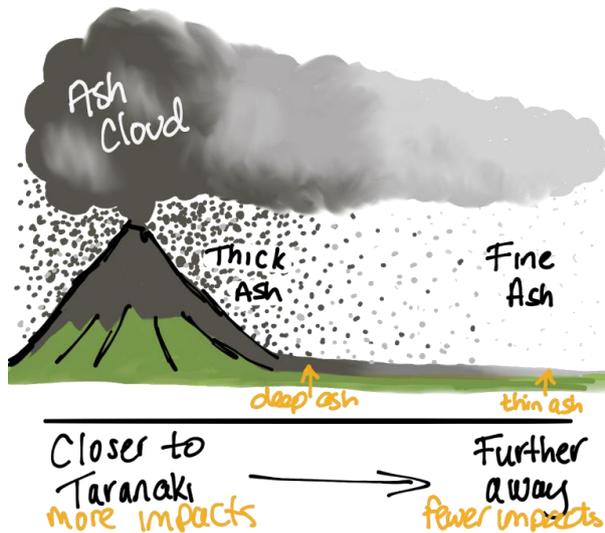
clearly and effectively, she used eye-tracking studies of how people view maps to determine where to put the most vital information, imposed a limit of 500 words per poster, and a reading age of 12 and up for the series.

“We wanted to make sure that someone might have remembered this information,” she says. “If we added something in, we’d have to cut something out somewhere else, so it really helped prioritize that information.”

“The things that happen around their volcanoes are not considered hazards (by Māori). They are considered expressions of that entity,” says Jon, who sees the move away from the use of ‘hazard’ in favour of words like ‘process’ or ‘phenomena’ as a proactive step in the communication of risk.

“‘Hazards’ has that real negative connotation. We’re trying to build resilience by getting people to recognize that these are natural events in our environment.”

An early sketch for the ashfall poster. Credit: Danielle Charlton



Reflecting on the impact the posters have had in the short time since their publication, Teresa says “In environmental education there is Awareness, Knowledge, Intention to Act, and then Action. The response has been massive. It’s our biggest social media post we’ve ever had. So, I think we’ve obviously got the awareness bit ticked off. But it’s a whole trail to get down to the other end where people are truly more prepared as a result of the posters.”

One other crucial decision the team made was to not use the term ‘hazard’ anywhere on any of the posters. This was done primarily out of respect for local Iwi, who view the maunga as an ancestor, but also to avoid any anxiety such language provokes.

With requests from schools and others pouring in, it is hoped that the TEMO’s Taranaki Maunga

poster series will prove to be a valuable tool in the ongoing effort to help build community resilience to future volcanic activity in the region.

[View the complete poster series here.](#)