



# Tourists, tourism destinations, and natural hazards

Tourism is an integral part of Aotearoa New Zealand's economy. As a country highly exposed to natural hazards, we need to understand the exposure of our tourism destinations and tourists to disaster risk.

We also need to examine how we communicate risk to international and domestic tourists, and the suitability of current emergency management processes and systems in responding to the needs of tourists in times of disaster.

This brief is designed primarily for policy analysts with a secondary audience of those working in regional tourism organisations and other tourism bodies. The brief synthesises multi-disciplinary research from the Resilience to Nature's Challenges National Science Challenge and draws on learnings from disasters over the last 14 years, from the Christchurch earthquakes to the impacts of COVID. The brief examines preparedness for a disaster alongside post-disaster response and recovery. It details key findings, suggests possible actions to improve outcomes, provides illustrative case studies and identifies where more research is needed.

## Tourists and risk

Everyone in Aotearoa New Zealand, including temporary visitors, is exposed to a range of natural hazard risks including earthquakes, severe weather and flooding. In addition, tourists are also exposed to hazards particular to their tourist experience, such as changeable weather conditions over several days while on a Great Walk, or spending time in a geothermal area.

Tourists may be particularly vulnerable to natural hazards due to their personal characteristics. Many visitors have limited knowledge about what to do or where to go following a natural hazard event. They may be unfamiliar with the area and local conditions and/or have limited language skills for following written or verbal instructions.

There is a tension between the need to attract tourists through the promotion of a safe and appealing destination image, and the need to educate tourist about hazard risk and safety considerations so they have some knowledge of what they might experience on their visit to Aotearoa New Zealand.

There are challenges in communicating safety information effectively with tourists. For example, those on a Great Walk will have different information and preparedness needs from those taking a tour bus to the Bay of Islands or Rotorua. In addition, destinations have different levels of exposure and vulnerability to natural hazards and disasters, due to their location, visitation patterns and nature of their tourism products.

Even tourists who claim to have high awareness of natural hazards have been found to have little specific knowledge of what to do during a natural hazard event, even when visiting a destination such as Kaikōura that has been impacted by such an event.

## **Tourist exposure**

The number of tourists in a specific location can vary wildly, depending on the time of day, season or holiday period, and even weather conditions. Huge fluctuations can occur over minutes as well as hours, particularly in tourist hotspots where people may not traditionally stay overnight. For example, people visiting Fiordland to go out on boat trips are typically doing a return trip in one day on highly-exposed highways, which means the impact of a natural hazard event is highly influenced by its timing.



Visitors on the Tongariro Alpine Crossing, Tongariro National Park

#### Case study: An 'average' day in Piopiotahi Milford Sound

Piopiotahi Milford Sound is one of Aotearoa New Zealand's tourist highlights, and it is also highly exposed to earthquake risk due to the location of the Alpine Fault just kilometres from tourist facilities. The Alpine Fault has a 75% chance of generating a magnitude 8+ earthquake in the next 50 years, and research has shown that when these major earthquakes happen, there is a strong likelihood of landslide-generated tsunami events occurring that could have devastating consequences for people and infrastructure in Milford Sound.

Researchers used sensors to collect anonymised cell phone 'pings' per minute.<sup>1</sup> Any wifi-enabled device continuously looks for a network to connect to. These pings are a good proxy for how many people are within a 100-200m range at any time.

Researchers used more than 600 days of data to consider how risk manifests and changes over the course of a day, week, season and year. Results showed there are peaks in visitation associated with departure and arrival times for scenic cruises, and on Saturdays and in school holidays.



Figure 1: Number of tourists at Piopiotahi, Milford Sound across an average day, estimated by wi-fi pings per minute. Credit: Mat Darling

<sup>1.</sup> https://resiliencechallenge.nz/using-data-sensors-to-understand-tourist-disaster-risk/

## Hazard risk and disaster readiness information for tourists

Tourism providers play a crucial role in providing hazard information and warnings to tourists, including those who may have limited English language, however, recent research with tourism providers suggest there are different views about who should be responsible for sharing this information.

Hazard information, particularly on warning signs, evacuation routes and emergency response advice, should be translated into multiple languages, as language barriers can hinder tourists' ability to interpret and respond to natural hazard information effectively. Speakers of Mandarin, German and Japanese are among the top ten visitor markets to Aotearoa.

Research shows that on-site hazard warnings are more effective when combined with pre-arrival education about safety risks. This pre-arrival educational information, such as videos on airplanes carrying tourists, could be used to increase awareness about hazards and preparedness for tourists visiting Aotearoa New Zealand. Pre-arrival information should be balanced to provide useful, practical information without causing fear or apprehension amongst inbound international tourists.

## **Tourist differences**

Independent travellers from all countries generally have better hazard awareness than group tourists, but may also be exposed to greater risks, being more likely to roam 'off the beaten track'. Group tourists tend to rely more on their tourism operator for safety instructions and may be less wary, however being with a guide can also mean better support during a natural hazard event.

Australians and Europeans who are in Aotearoa to experience the great outdoors are often better prepared and are more likely to have the right clothing and equipment, due to cultural similarities and comparable experiences in their home countries.

#### Case study: Chinese tourists on the West Coast

A survey of Chinese tourists visiting the West Coast found only 31 percent were aware of the natural hazards in the region. Despite this, 66 percent had seen natural hazard warning signs, and 34 percent had felt unsafe due to natural hazards during some part of their trip. More than a quarter of respondents acknowledged that the clothing they had brought was inappropriate for the conditions, and 17 percent reported their footwear inappropriate. Interviews with tourism operators revealed that Chinese tourists often needed additional attention and guidance on tours due to a lack of situational awareness of hazards.

Few Chinese tourists travel with travel insurance compared to other nationalities. Chinese tourists rely on tour leaders or local guides for information due to language barriers and may rely on their national embassy for assistance following disasters.



Punakaiki, West Coast. Jocey K, Flickr



## **Outdoor recreation preparation**

International tourists come to Aotearoa New Zealand for many reasons, but a large part of the appeal is the natural landscape and outdoor activities.

Many visitors are unprepared for poor and changeable weather and basic facilities in the outdoors, and do not carry appropriate clothing, footwear, or safety equipment. Research shows tourists from large overseas urban centres may be at most risk. However, even experienced domestic and international recreationists find conditions, infrastructure and communication facilities differ to what they had expected and can therefore be poorly prepared.

#### **Case study: Tramping conditions**

Because New Zealand conservation areas operate largely on a 'freedom of access model', there is limited oversight or control over who enters these areas, when they do so, and what they take with them. Unlike in other countries, the conservation estate generally remains 'open', even when conditions mean that access could be unwise or dangerous due to current or forecast weather conditions. Because many visitors have no contact with land managers before entering these areas, they are not advised on appropriate preparedness and may not consider alternate plans or routes before departing.

There is also evidence that international visitors may have unrealistic expectations of services and facilities available, including communication coverage or the presence of rangers. This can mean they fail to carry an emergency communication device or the necessary provisions and equipment.

When outdoor recreation groups were surveyed, many participants, including experienced New Zealand trampers, reported being surprised by conditions that were different from what they expected, including the fast-changing weather. The simplicity of infrastructure along many routes, including at DOC huts, meant they were not always prepared for the cold or lack of facilities.

Visitors to our conservation areas do not always digest information about natural hazards, weather conditions in conservation areas, and advice on appropriate supplies, including the use of personal locator beacons. Although the Department of Conservation provides thorough information about risk management to those booked in for a Great Walk, this information is not always absorbed or taken seriously.

Many other people participate in outdoor recreation without contact with the Department of Conservation or other land managers. In-person briefings have been shown to be more effective than written information and signage, but open access to the conservation estate means visitors do not arrive at set times, making such briefings unfeasible.



Nelson Lakes National Park. Fabio Salani, Flickr

## **Emergency management planning**

Tourism businesses and organisations have skills, knowledge and resources that can support emergency management agencies. Partnership between the tourism sector and those involved in disaster planning will aid effective emergency response and community resilience.

Civil Defence Emergency Management groups and regional tourism organisations have been identified as important coordinators and facilitators between tourism and emergency services, however they may need more resources and capacity to perform these bridging functions. Policymakers should consider allocating more funds to enable Civil Defence Emergency Management groups to build connections with tourism stakeholders. Policies and frameworks should enable tourism businesses to feed into disaster management.

Successful collaborative partnerships between tourism and emergency management organisations depend on *ongoing* interactions between them with appropriate resourcing. In many small communities, local tourism workers are also involved in emergency response such as search and rescue, and volunteer fire brigades. Establishing local disaster preparedness groups, holding regular meetings, conducting scenario exercises and training, and using new communication technologies are all possible strategies, but will require appropriate funding and support, which is not currently available for most regional tourism organisations.

#### Case study: Southland Floods evacuation, 2020

The 2020 Southland floods involved the largest ever air evacuation of tourists from Piopiotahi Milford Sound and surrounding conservation areas. The Fiordland Hazards Group worked efficiently to launch the response, which was largely successful because they had formed the necessary relationships between emergency management and tourism operators ahead of time.

There is often a difference in language and systems between tourism operators and emergency responders. Robust communication channels and information-sharing systems will help avoid misunderstandings during a future disaster response.

- Tourism stakeholders should be encouraged to become familiar with the Coordinated Incident Management System so they can understand emergency responders' language and systems.
- Tourism and emergency managers should collaborate and build their relationships as part of 'business as usual', so they are ready to work together during a disruption.
- Emergency responders could examine the accessibility of their language and communications systems for people who do not work in emergency management, including tourism stakeholders.



Cruise on Milford Sound. Bernard Spragg, Flickr

## **Destination resilience**

Tourism is one of the top export earners for Aotearoa. For the year ended March 2019, and prior to COVID, total tourism expenditure was \$40.9 billion, with international expenditure contributing \$17.2 billion. Tourism generated 5.8 percent of our GDP and was directly responsible for 8.4 percent of total employment. The New Zealand-Aotearoa Government Tourism Strategy aims to ensure New Zealand is enriched through sustainable tourism growth, which will be underpinned by "productive, sustainable and inclusive" tourism so that "New Zealanders' lives are improved by tourism." <sup>2</sup>

The industry experienced significant disruption following the Canterbury earthquake sequence (2010-2011), and again following the Kaikōura earthquake in 2016. COVID also had a significant impact.

#### Case study: The 2016 Kaikoura earthquake and the tourism industry

Following the 2016 earthquake, tourism expenditure in Kaikōura dropped dramatically. Guest arrivals declined 85% compared with the same November–December period in 2015, and domestic and tourism spending fell from a record high of NZ\$125 million in 2016 (year to September) to NZ\$63 million the following year.<sup>3</sup>

The recovery process in Kaikōura took close to two years, due to the need to rebuild State Highway 1 to the north and south of the town. It appears, however, that the appeal of the destination was not negatively impacted the disaster, with the tourists returning with the highway's reopening. Several factors were key to the rebound. The tourism sector was able to work together, maintain a united front and stay 'on message'.

The recovery also saw relationships strengthen between the Kaikōura tourism industry and the wider Canterbury region, due to their shared experiences of adversity. The region's strategy of targeting domestic tourists initially was also successful. There is no doubt that a substantial injection of government funding to bolster the recovery marketing efforts – funds well beyond what is usually available to a regional tourism organisation of this size – significantly strengthened the reach and impact of marketing campaigns.



Kaikōura. Alimison, Pixabay

In 2020, the New Zealand government mandated that regional tourism organisations develop destination management plans explicitly addressing risk and crisis management. The guidelines state: "Risk management is vital, given New Zealand's propensity to natural disasters such as earthquakes, volcanic eruptions and severe weather events. Both the tourism industry and destinations must plan for such events, undertake risk assessments and pre-plan and practise response strategies." <sup>4</sup>

The resulting destination management plans are varied. Some include detailed and specific assessments of natural hazard risks, others make no mention of the issue at all or include generic statements. Generally, the plans focus more on lowering carbon emissions than on adapting to the increasingly likely risk of climate-related natural hazard events, or developing emergency management plans.<sup>5</sup>

## What is a resilient tourist business?

Tourists and tourism businesses are often essential to a location's social and economic recovery following disaster. These are the most important elements in improving the resilience of a tourism business:

- Having a crisis management plan and clear response strategies in place is critical to the resilience of businesses at a time of crisis. Corporate organisations tend to be better prepared for these events. Where organisations have plans in place or can define their needs it is easier to source government support.
- Rapid decision-making and responses are essential during and immediately after a disaster event and coordinated action at a regional level is critical.
- Achieving a careful balance between a rapid, proactive response and the need to engage in long-term strategic thinking.
- The resilience of a business or a region is positively impacted by strong networks. Social initiatives that connect people to each other and strengthen social relations are crucial for supporting the recovery.
- Using an experience of a crisis or disaster as an opportunity to review plans, with lessons incorporated into future planning.

This approach can build resilience to all kinds of threats, from pandemics and earthquakes to high-impact weather and market shocks.

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 <sup>&</sup>lt;u>https://www.mbie.govt.nz/immigration-and-tourism/tourism/tourism-projects/destination-management-guidelines/components-of-a-destination-management-plan/risk-and-crisis-management</u>
Fountain 2024

### Areas for more work

Further research is needed in the following areas:

- More real-time understanding of visitor movement patterns and exposure to hazards.
- Understanding the most effective forms of pre-trip risk communication and public education targeting visitors.
- How to effectively resource and prepare emergency managers and tourism providers to work together before a crisis to improve post-disaster response and recovery.

#### Resources

The AdventureSmart website, especially the <u>Land Safety Code</u> page is a useful resource for tourism operators in advising visitors on how to be prepared and resilient while experiencing the great outdoors in Aotearoa New Zealand.

The Ministry for Business, Innovation and Employment has a <u>best practice guide</u> for preparing destination management plans.

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