

'They've made a boundary here': Local government mergers, emergency management and social rupture following disasters

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ARTICLE INFO

Keywords:

Merger
Amalgamation
Disaster
Social rupture
Recovery

ABSTRACT

Local government boundaries play an important role in how disasters are managed. However, the potential effects of how these boundaries are set—on community identity, place attachment, and the process of disaster recovery—remain lesser known. This paper explores the relationship between local government mergers and experiences of social rupture following disasters. Case studies are presented from merged municipalities that faced the 2019-20 bushfires in Australia and the 2011 'triple disaster' in Japan. Cases include the Snowy Valleys Local Government Area (Australia), which merged 3 years prior to the disaster, Kawamata town (Japan), which merged 56 years prior to the disaster, and Minamisoma city (Japan), which merged 5 years prior to the disaster. Qualitative case studies are presented, drawing on interviews, surveys, media, and ethnographic research. In all cases, residents raised past mergers when reckoning with the disaster and its aftermath. Additionally, the enactment of new boundaries in emergency management, for instance to define evacuation zones or eligibility for financial assistance, were perceived by residents to interact with prior mergers; in some cases, favouring larger towns, and in others, 'undoing' the merger and replicating former boundaries. Interactions between past and present boundaries contributed to a sense of rupture in social fabric. The present findings extend Kai Erikson's concept of social rupture by highlighting how governance decisions, even those that may appear unrelated to disasters, such as mergers, can contribute to the loss of meaningful community in disasters.

1. Introduction

Place, and distinctions between places, are imperative to consider in the management of disasters. Decades of scholarship from geography, sociology and anthropology highlight the importance of place to social experience, and simultaneously, how social

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<https://doi.org/10.1016/j.ijdr.2026.106379>

Received 11 May 2026; Received in revised form 12 August 2026; Accepted 12 August 2026

Available online 13 August 2026

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experience shapes place [1,2]. Research on place-making has shown how people ‘create and re-create the experienced geographies in which they live’ (p 54) [3]. Symbolic and social boundaries influence social life [4], including belonging to, or exclusion from, place [5–7]. In disaster studies, experiences of place –and place boundaries– have been studied in relation to social cohesion after disaster [8], the role of relationality and belonging to community wellbeing [9], and the effects of place loss through displacement [10]. Sense of place can also affect how individuals (re)orient themselves after disaster [11], remember the past, and imagine the future [12]. While these literatures widely recognise the effects of disasters on the relationship between people and place [13], there is limited research exploring the governance decisions that define place before, during, and after hazards occur and the effects of this on the relationship between people and place in disasters.

Disasters occur at the intersection of hazards and societal conditions. The United Nations Office for Disaster Risk Reduction (UNDRR) defines disaster as a ‘serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts’ [14]. Some research traditions focus on hazards themselves, however the field of disaster studies has drawn attention to the social and political drivers of disasters [15]. Governance choices affect the potential that a hazard becomes a full-blown disaster, by shaping community exposure, vulnerability and capacity levels [16]. For instance, in *Standing in the Need*, Browne [17] overlays the vulnerability of bayou residents in New Orleans to the onset of Hurricane Katrina with the fifty years of local and state decisions to reclaim and urbanise floodplains. In turn, past decisions to alter the land heavily influenced the losses experienced during Katrina, exemplifying how the governance of place over time can influence the effects of disasters. A wide range of policy decisions can influence the occurrence and impact of disaster, including those that directly relate to disasters (e.g. earthquake building codes or their absence), as well as the more subtle decisions that can have large impacts on how disasters are experienced. One such example is the governance of area boundaries, which we focus on in this paper through examining local government mergers.

Area mergers (or amalgamations) refer to the process of combining two or more administrative areas. This can be done through forced or voluntary measures and can involve the absorption of a smaller town or village into a larger government boundary, or the creation of new ones. The past five decades have seen increased mergers across high-income countries, driven largely by arguments for economic ‘efficiency’ and predominantly studied in the fields of planning and administration studies [18,19]. There has been mixed evidence on whether local government services improve or decline after mergers [20,21], and how this impacts local democracy [18, 22]. While there is evidence that municipalities may ‘consult’ communities about mergers, there is also evidence that many appear to proceed regardless of consultation findings [23]. While some studies have examined how citizens of different places view mergers in the lead-up to their implementation [24,25], there has been limited research into the after-effects of mergers on lived experiences of place, social cohesion and wellbeing.

A further gap exists in that area boundaries and administrative mergers have rarely been discussed in relation to disasters. This is significant given that local government boundaries are frequently cited in governance decisions amid disasters (e.g. defining which areas are considered ‘affected’), influencing resources and services available to people during and after disasters. For example, the Australian Government Disaster Recovery Payment is made available only to residents of specified Local Government Areas (LGAs), which are the geographical unit on which disaster declarations are made. Formal administrative area definitions are often used as a direct determinant of whether someone is considered ‘disaster exposed’ and therefore eligible for support, despite the fact that people may have been travelling through the area or living just outside a formal area boundary but still experiencing the effects of the disaster. The impacts and inequities associated with these decisions have been discussed in the field of disaster studies [26]. However there has been limited research that expands inquiry to how these area definitions were initially set and potentially altered through mergers prior to a disaster. There remains a need for further research on the ongoing impacts that mergers may have in shaping how people and communities relate to each other through disasters, access recovery support, experience belonging or exclusion, contribute to place-making, or potentially influence forms of social inequalities seen during and after disasters.

Australia and Japan are particularly relevant contexts for examining area mergers and disasters. Both countries are extremely hazard prone and have undergone a series of mergers as part of government reforms [27]. In Australia, mergers have resulted in an 88% reduction in the number of LGAs across the country between 1910 and 2016 [28]. Japan similarly has a history of local government mergers which has led to an 86% reduction in municipalities between 1922 and 2014 [27]. In both Japan and Australia, research has focused on examining the financial sustainability of government mergers, or aspects of operational efficiency and effectiveness, with inconsistent findings [27]. The social side of mergers, and their effects in community life –before, during and after disasters– remains lesser known.

In this article, we draw on cases from Japan and Australia to explore the extent to which previous mergers may have an influence on how present-day disasters are experienced. Simultaneously, we examine how new area boundaries set during present-day disasters (e.g., evacuation zones) can influence how people engage with past mergers. In doing so, we make the case that past and present area boundaries set by government can interact in the lives of individuals experiencing disasters. Building on Erikson’s [29] concept of social rupture, that disasters can fracture community cohesion and identity, we examine how administrative restructuring through mergers can complicate the effects of disasters through disrupting place-attachment and local identity, thereby altering networks critical for disaster resilience. By integrating these perspectives, we explore how pre-disaster administrative changes may influence vulnerability, recovery, and cohesion, situating mergers as interventions that can alter risk, belonging, and inequality in disaster contexts.

2. Theoretical framework and methods

In the classic text *Everything in its Path: Destruction of Community in the Buffalo Creek Flood* [29], Kai T. Erikson recounts the

experience of a West Virginian community affected by sudden coal waste dam failure. Central to his analysis, which we also draw on here, is that when calamity strikes, it affects not only individuals but whole communities. Erikson highlights how disasters can result in collective trauma, defined as ‘a blow to the basic tissues of social life that damages the bonds attaching people together and impairs the prevailing sense of communality’ (p 110). Disasters very often inflict lasting damage on a community's social fabric and sense of place. In this way, networks of trust, shared meaning, institutions, routines, and emplacement that give a community its coherence can undergo strain [17]. Social rupture occurs when people lose not only homes or livelihoods but also the taken-for-granted consistency that anchors place identity and belonging.

In extant literature, the origins of social rupture are most often considered in relation to experiences during and after the hazard event. However, here we examine the potential for mergers, taking place years before a hazard strikes, to contribute to social rupture in disasters. We draw on and extend Erikson's idea of social rupture to examine mergers as a governance decision that is not directly labelled as being about disasters, but which carries the potential to affect how individuals relate to each other and their community through disasters.

This paper presents three comparative case studies that explore a new way of understanding social rupture through a focus on the interplay between area boundaries, administrative decisions and disasters, initially identified in larger research projects. Authors 1 and 2 were each conducting separate studies focused on post-disaster health and wellbeing in Japan and models for community-centred recovery in Australia. However, by coincidence, they found that research participants were frequently discussing administrative area boundaries and prior mergers, when asked about their experiences of disaster recovery. Authors 3 and 4 reported similar observations in their work on long term disaster recovery and health in Japan. The importance of area boundaries to discussions of recovery here represent an example of ‘emergent entities’ in qualitative research, whereby unanticipated phenomena or findings are gleaned inductively [30]. After all authors realised the prominence of this theme, and similarities in observations across research sites, the decision was made to analyse these data together to present revelatory case studies [31].

In the tradition of Bartlett and Vavrus [32], these cases were examined across place, time and scale through an inductive comparative case study approach. This multi-sited and multi-scalar approach looks at translocal knowledge, where ‘the global’ —in this case, the increase in mergers on the basis of economic efficiency across high-income countries occurring parallel to the increase in projected frequency and severity of disasters— is examined on the local scale. Analytically, the global is here ‘collapsed into and made an integral part of parallel, related local situations, rather than something monolithic or external to them’ [33] (p 1-2, as referenced by Bartlett and Vavrus [32], p 42). We examine the similarities and differences across these cases to extend understandings of how prior mergers may affect experiences of disasters, and social rupture, and explore any shared processes seen across the cases.

2.1. Disaster contexts

2.1.1. ‘Black summer’ bushfires, Australia (2019–2020)

Between July 2019 and March 2020, Australia experienced some of the most severe bushfires in the country's history, known as the Black Summer Bushfires. More than 20 million hectares of land was burnt (the approximate size of the United Kingdom), 33 people died, and over 3000 houses were destroyed [34]. It is estimated the fires contributed to 900 million metric tons of carbon dioxide, leading to a further 417 deaths, and 4500 cardiac, asthma and respiratory hospitalisations [35]. Over one billion animals were killed, leading to evidence of species extinction [36]. New South Wales (NSW) was the state most affected, with a total of 5.5 million hectares burnt, 2475 houses destroyed, and 25 lives lost.

In the Snowy Valleys LGA of NSW, the focus of case study 3.1, almost half of the 900,000 ha area was fire-affected. This region is home to large pine plantations and paper production facilities, with pine being highly flammable. In late December 2019, two fires merged to become a 600,000 ha megafire. There was an orderly evacuation of the largest two towns, the centre of prior LGAs before the merger. However, while several smaller towns and villages were told they would be spared from the fire, this was later updated following a change in conditions that meant they were in the line of fire, and the town of Batlow was told they were considered ‘undefendable’, sparking community-wide concern and a hasty evacuation [37].

2.1.2. Great east Japan earthquake, tsunami and nuclear disaster (Japan, March 2011)

On March 11, 2011, Northeast Japan was struck by a magnitude 9.0 earthquake and tsunami, which led to a subsequent nuclear disaster at Fukushima Daiichi Nuclear Power Plant. 19,787 people died and an additional 6254 people injured—2549 remain missing [38]. The release of radioactive materials led the Japanese government to issue evacuation orders that ultimately displaced approximately 160,000 people [39]. The United Nations Committee on the Effects of Atomic Radiation (UNSCEAR) found no adverse health effects due to radiation among the public and anticipate no future detectable effects for the public [40]. However, the disaster has had long lasting effects, including prolonged evacuation, demographic changes, and difficulties relating to job loss, stigma, lifestyle change, and financial compensation [41,42].

In Fukushima Prefecture, the focus of case studies 3.2 and 3.3, 12 municipalities received evacuation orders. In most cases, the orders were given to entire municipalities; however, in the case of both Kawamata (3.2) and Minamisoma (3.3), only part of each municipality was designated under such evacuation orders [43]. In both cases, the evacuation orders mapped on to former (pre-merger) municipal boundary lines.

2.2. Data collection

2.2.1. Snowy Valleys case

An exploratory qualitative design was used, comprising ethnographic research (participant observation and field interviews) with 60 residents involved in recovery workshops and media discourse analysis of 45 articles. Research formed part of The Resilient Towns Initiative, a university-led, locally implemented recovery project facilitated by researchers, including Author 2, local, state, and federal government personnel, and two local not-for-profits [44]. Ethnography involves researching a community by participating in its members' lives: observing, interviewing, and documenting their experiences, perspectives, and networks [45]. This brings together individual and shared understandings, combining lived experience with extant literature, to expand knowledge through analysis [46]. Fieldwork took place cumulatively over three months between 2021 and 2024. Ethics approval was granted by the University of New South Wales (ID HC210846). Semi-structured interviews were conducted with recovery workers living in the area ($n = 5$, P1-P5) involved in the Resilient Towns Initiative. Media analysis focused on references to the council merger and de-merger in online news articles written between 2016 and 2026.

2.2.2. Kawamata case

Qualitative document analysis was used to examine sources of data on disaster recovery in Kawamata, drawing on existing surveys and interviews that had been made public in combination with key informant consultation. Secondary data was examined, including a survey of evacuees' intentions to return, conducted by Kawamata Town government ('Resident Opinion Survey Report 2019'), and a handbook of evacuees' stories, aimed at supporting those did return, compiled by the Ministry of the Environment ('Living guide for returnees 2017'). The former was available online and the latter was accessible through a project that Authors 3 and 4 were part of. The Kawamata Town survey was mailed to 530 households and completed by 268 individuals (response rate of 51%). The Ministry of the Environment project included interviews with residents. As the Kawamata case is comprised of document analysis of existing publicly available data, ethics approval was not required.

2.2.3. Minamisoma case

Semi-structured interviews were conducted with 22 Minamisoma residents as part of a study examining perspectives on health inequalities after the Fukushima disaster. Fieldwork took place between March and June, 2018, and interview participants were recruited through engagement with community groups including farming and fishing associations, a support group for parents, and a knitting group, among others, with the aim of recruiting across the socioeconomic gradient of the city. Recruitment focused on those who lived in the area prior to the disaster and who were willing to speak about the area boundaries they felt were important to consider in health and wellbeing studies post-disaster. Interviews were conducted in Japanese language by Author 1, transcribed, and then translated to English for analysis. Ethics approval was granted by the Minamisoma Municipal General Hospital Institutional Review Board (ID 30-09) and the University of Edinburgh (ID 244060).

2.3. Data analysis

A qualitative case study approach was utilised to inductively examine how area boundaries and mergers were brought up in the three cases, and to then assess what generalisations could extend across the cases [47]. Data from each case study was first analysed separately through inductive thematic analysis [48], and then together, to examine similarities and differences. Author 2 led analysis of the Snowy Valleys case, Authors 3 and 4 led analysis of the Kawamata case, and Author 1 led analysis of the Minamisoma case. Investigators then collaboratively reviewed findings and identified key themes. This work draws on the growing tradition of analysing multiple sources of qualitative data [49], and the growing use of secondary qualitative data analysis in disaster studies [50]. Interview and survey data were triangulated with academic and grey literature and qualitative data gleaned from fieldnotes, newspaper clippings and public signage. Each author has long-term engagement with one case study community, which allowed for building rapport and gaining insight over time. Rigor, in this context, was considered in the approach of Ahmed [51] to trustworthiness in qualitative research. For example, the authors worked with reflexivity to ensure the analysis was not structured around existing preconceptions. This was done by continued discussion during each case study analysis and the comparison between them, consciously looking for examples that went against emerging findings, and triangulating multiple data sources.

3. Findings

3.1. Snowy Valleys

3.1.1. Administrative area definition and merger

The Snowy Valleys is equidistant from the major cities of Sydney and Melbourne (Fig. 1) and is distinguished by an alpine ecosystem of mountain ranges and freshwater lakes. For the Ngarrigo First Nations people, these land and water formations represent the original boundaries of their traditional homelands. British settlement in the region began in the early nineteenth century. By the mid-nineteenth century, gold was found in the region, putting it 'on the map'. Primary production expanded during this time, including animal husbandry and nut and fruit orchards, especially apples. The Municipality of Tumut was established in the region's north in 1887 and the Tumbarumba Shire, in the south, in 1906. At the 2021 Census, the largest town was Tumut (pop. 6613) with several smaller towns, including Tumbarumba (pop. 1915), Batlow (1,270), Adelong (pop. 938), and Khancoban (pop. 319).

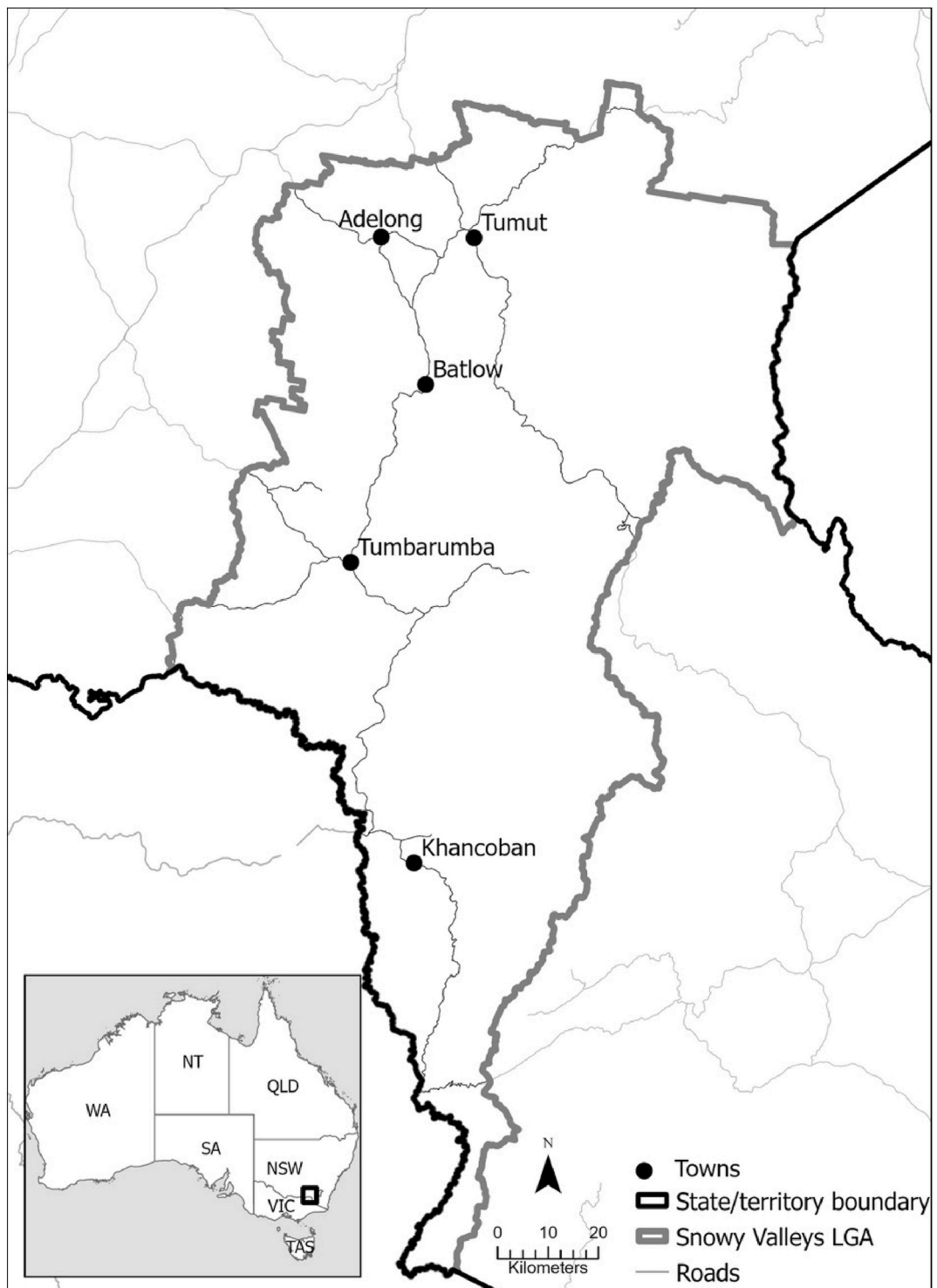


Fig. 1. Map of the snowy valleys local government area, Australia.

The Snowy Valleys LGA was created on 12 May 2016, following the NSW government's *Fit for the Future* initiative, forcibly merging Tumut and Tumbarumba Shires. The decision was marked by limited community consultation [52] and significant opposition from local authorities [53]. Media analysis identifies a schism between how different towns responded. Interest groups emerged, including the Save Tumbarumba Shire group, and independent politicians have run on platforms that support or criticise the merger. Smaller towns located outside of Tumut and Tumbarumba reported increased “disharmony” due to the merger [54]. Services were centralised, establishing Tumut and Tumbarumba as central nodes within the new boundary network. Tumbarumba residents were nevertheless “bitterly opposed” to the merger [52,55], fearing a loss of local identity and power through being paired with the more populous town of Tumut. The expected cost savings remained contentious, with reports suggesting expenses had risen due to the complexities of managing a larger LGA [56]. Indeed, rates were later increased in 2022–23 beyond the rate peg. This decision was implemented to recover operating losses linked with the merger, stoking public outrage. As quoted in the media by a resident after a town hall on the issue: “the old Tumbarumba shire was really good for Tumbarumba ... We had money, we made our own decisions, we were good at being proactive ... I don't believe that it's been a good move to be merged” [57].

For the Ngarigo, the process was deemed as not culturally safe or supportive, leading the First Nations community to largely withdraw from discussions on the merger (fieldnotes, 16 November 2021). This echoes research that demonstrates how consultative processes can ‘bound and limit’ First Nations recognition [58].

3.1.2. Area definitions during disaster

The definition of areas, and their change in the forced merger, was seen by residents to directly affect what happened during disaster. The town of Batlow, one of the smaller towns in the merged LGA, located between the two larger towns of Tumut and Tumbarumba, is a case in point. While the State fire brigade had given some areas an ‘Emergency Warning’ and evacuated parts of the LGA, the imminent fire danger was communicated very late to Batlow township. In early January 2020, residents were informed that conditions had changed, and the town was now ‘undefendable’, meaning they needed to leave immediately [37]. Many felt that the evacuation would have been smoother if they were in control of communication and consulted about the procedure, rather than city-based emergency managers and the larger towns of Tumut and Tumbarumba, where control was centralised after the 2016 merger.

Following the bushfires, emergency managers found themselves walking into meetings where Batlow residents raised anger about the merger during discussions intended for disaster recovery support, demonstrating that the merger was top-of-mind, even though it occurred over three years prior:

I walked into the first recovery meeting of about 50 people. They all started about stuff [about the merger]. I said, “I can't help you with that. I'm here to talk about the needs of the community for recovery, not about the merger of council. [But] if you wanna talk about our immediate needs as a community, I'm happy to stay.” All this other stuff came up. (Recovery practitioner and local resident, P4)

Batlow's evacuation experience was also borne out in community discussions as part of the Resilient Towns Initiative. Comments about emergency managers “not being welcome” in town or that “they were yet to apologise” about poor disaster communication and the hasty evacuation, were prominent themes in Author 2's unpublished fieldnotes (17 November 2021).

The defiance of residents was connected to other statements made during townhall meetings, in which comments were made about Batlow being comparatively under-resourced prior to the bushfires and missing out on funding afterward. Post-disaster recovery resources directed towards the whole LGA had been centralised to Tumut [59], in this way mapping onto former municipal lines and perpetuating Tumut's status as a central node historically within the region. During the recovery, local ire increased when the town of Tumut was awarded competitive funds to turn the basketball centre into an evacuation centre in times of disaster.

Do we need [the evacuation centre] to be in Tumut? I would've much rather seen funding put into each town to upgrade existing facilities for their [state designated] safe places. (Recovery practitioner and local resident, P2)

Among the Batlow community, it was felt that these funds could be better used throughout the whole region to reduce disaster risk rather than being centralised to the largest town.

[If we hadn't merged] we would have had Tumut Shire and Tumbarumba Shire getting separate funding—double the support. Having them together, that's been the challenge—in terms of trying to make sure recovery funding isn't centric to any one town. (Recovery practitioner and local resident, P1)

Impressions of the merger have remained low post-disaster. In 2021, a biannual independent survey of Snowy Valleys residents ($n = 400$) reported low satisfaction 18 months after the fires, with 53% of respondents rating the local government as either poor or very poor, compared to 17% in 2018 [60]. A demerger citizens' group was established and formalised after the bushfires. Across the region, erected signage demanded that a demerger take place (Fig. 2). Discursively, signage linked the demerger to “saving the shire” and “removing the rot”, with the prospect of staying amalgamated akin to regional decline. In late 2025, 87% of residents voted in favour of de-merging, with Tumut and Tumbarumba set to be reconstituted as separate local government areas in 2028.

A business case for the demerger [61] highlights three important factors for understanding the relationship between the merger and the management of disaster. Firstly, disasters do not substantively feature in the case for the merger or de-merging, save for treating hazards as exogenous. Secondly, a review into the merger coincided with bushfire recovery efforts. Public servants flagged the region was in the process of rebuilding and that the NSW government should provide ongoing support to ensure the merger review did not distract from recovery. Thirdly, that had the merger never taken place, the region would have been eligible for double the recovery



Fig. 2. Signage demanding a demerger to “save our shire” (Source: Author 2, 2022).

funding, as they would have constituted separate LGAs. These points demonstrate the crossovers between the boundary governance and disaster management. However, recovery workers in the area also expressed caution about how smaller towns would have fared if the merger never took place, or if a de-merger had occurred before the bushfire:

I would’ve worried about Batlow in a demerged council. It would have been very much the small town at the end of a small shire. (Social Services Manager and resident, P3)

This point is reinforced by Drew et al. [61], in which they highlight the vastness of the merged region, introducing new risk factors. There has been little mention of disaster risk reduction as part of the calls for the demerger. However, a core aspect of the demerger public narrative is the importance of community identity and belonging (fieldnotes, 22 November 2022), which are drawn on to justify the need to demerge after the disaster (i.e., to return to a prior sense of community albeit in altered natural and social environments).

3.2. Kawamata

3.2.1. Administrative area definition and merger

Kawamata town is located in the northern part of Naka-dori (central) region of Fukushima Prefecture, Japan (Fig. 3). Kawamata sits at the meeting point of two rivers in the mountainous part of Fukushima Prefecture. In 2017, Kawamata had a population of 14,123 which has dropped to 11,412 in 2025.

Kawamata town in its current form was established on March 1, 1955, through a voluntary merger of seven villages including the former Kawamata town and Yamakiya village. In 2004, a statutory merger council was established to further merge Kawamata with the larger Fukushima City. The following year, however, opposition to the merger grew and Kawamata town withdrew from the 2004 merger council.

Despite the 1955 merger that administratively joined the areas, there continues to be differences in Kawamata between Kawamata district (former Kawamata town) and Yamakiya district (former Yamakiya village). Each was not only a municipality before the merger, but also sat in different counties: the former Kawamata town belonged to Date county while the former Yamakiya village belonged to Adachi county. The present Yamakiya district has largely remained independent from the rest of Kawamata town, organizing separate community events and having its own kindergarten, elementary school, and junior high school. Even after the 1955 merger, there are strong feelings of independence that remain.



Fig. 3. Map of Yamakiya district within Kawamata town, Japan.

3.2.2. Area definitions during disaster

The Great East Japan Earthquake was strongly felt in Kawamata town. Following the explosions at Fukushima Daiichi Nuclear Power Plant, evacuation orders were only given to Yamakiya district (located 33 km from the power plant) in Kawamata town, based on the expected spread of radioactive materials which were predicted to reach 20 mSv for individuals within 1 year after the accident. These decisions were distinct from initial boundaries that were used for evacuation orders based on power plant proximity (with orders given to the 20 km radius and 20-30 km radius), with the Yamakiya evacuation informed by trends in the spread of radiation rather than geographical proximity. On April 22, 2011, Yamakiya district residents were given planned evacuation orders, which required them to evacuate within 1 month. The rest of Kawamata town did not receive evacuation orders. The evacuation order for Yamakiya district was eventually lifted in March 2017, however the rate of residents returning to the area has been slow.

The political independence of Kawamata Town, and strong independent spirit among Yamakiya and Kawamata districts, came to the forefront in experiences of the disaster and recovery. Emergency management decisions made during the disaster often fell along the lines of previous municipal boundaries, from before the 1955 merger when Yamakiya was a village. The evacuation orders applied only to the Yamakiya district appear to have reactivated and intensified a pre-existing sense of difference between Yamakiya and the rest of Kawamata. In a ministry funded project that included interviews with residents of Yamakiya district, residents suggested that Kawamata local government treated Yamakiya as separate from the rest of Kawamata. There was a sense of 'othering' Yamakiya, as the interviewees reflected as if they were treated differently than the rest of Kawamata by being told to 'do things themselves'. Other

interviewees reflected that when trying to plan regional events, the Kawamata town office ‘seemed to take it as just the [Yamakiya] district matter’ emphasising it as a separated area rather than viewing it as a part of the town.

In a self-administered survey mailed to 530 former households in Yamakiya district in 2018, around 40% of evacuees responded that they wanted to stay connected with Yamakiya. However, some residents used the free text area of the survey to discuss differences between Yamakiya and the rest of Kawamata and express a sense that the district was a ‘burden’.

It’s sad to see my hometown disappear, but I think it can’t be helped. ... I think Yamakiya is a burden for Kawamata Town, so I think it would be better to let evacuees move to Kawamata Town [instead of staying in Yamakiya]. (Former Yamakiya resident)

Here, Yamakiya is compared to Kawamata town, despite being technically within Kawamata town itself.

This comparison emphasises the sense of re-separation through evacuation decisions that replicated former, pre-merger, municipal boundaries. These sources suggesting that despite a strong connection to the Yamakiya area, former residents perceive a boundary between Yamakiya and the rest of Kawamata as influencing the process of disaster recovery. In this sense, the disaster did not simply undo an integrated municipal merger; rather, evacuation orders, return planning, rebuilding, and recovery-related activities appear to have intensified a long-standing identity boundary that had persisted after the 1955 merger, thereby reproducing former municipal lines between Yamakiya and the rest of Kawamata. In the Kawamata town disaster archive report, the mayor sets goals for rebuilding, one of them being to ‘rebuild into a town where bonds and ties are maintained and residents can feel happy’. Yamakiya is then mentioned separately from the Kawamata recovery efforts, emphasising that they are viewed differently:

Based on the reconstruction goals, we will also work to improve the environment for the early reconstruction of Yamakiya district and speed up various reconstruction projects. (Town mayor)

On the other hand, there have been external support programs after the disaster which have focused on all parts of Kawamata. Kindai University opened the Great East Japan Earthquake Reconstruction Support Office in 2012, which began a collaboration between the University and Kawamata Town to focus on job creation, the promotion of existing branded agricultural and livestock products, cultural projects, and the creation of new products such as fresh flowers and vegetables [62]. These activities have been created for all of Kawamata Town, including both Kawamata District and Yamakiya District. The enthusiasm within Kawamata Town to engage with this distant institution is in line with historical traditions of creating new products (drawing on their traditions of inventing silk products) and culture (Kawamata holds an annual Argentinian Cosquín music festival that began in 1975).

Questions remain about the future of Yamakiya. As of 2025, 307 residents have returned to Yamakiya (Kawamata town, 2026) representing around 30% of its pre-disaster population. Community divisions were found to be one of the largest concerns for Yamakiya residents in a 2020 survey, in addition to population aging, disruption of cultural traditions, and concerns around the storage of materials removed during decontamination [63]. At the same time, Yamakiya has become a central point for exchange between experts and local residents [63]. New programs held to promote farming, local speciality products from Yamakiya (such as flower arrangement), and holding exchanges held between Yamakiya residents and visitors has been credited with giving surveys a sense of ‘rediscovering the good aspects of living in Yamakiya’ [63]. A separate focus on Yamakiya from the rest of Kawamata is again a prominent element to these discussions of recovery.

3.3. Minamisoma

3.3.1. Area history and area definitions

Minamisoma city is located on the Northeast coast of Japan, in the Hama-dori (coastal) region of Fukushima Prefecture (Fig. 4). The area is flanked with mountains to the West, coastline to the East, with substantial farmland around residential and fishing areas along the coast. In 2018, the city had a population of 61,452, which has dropped to 55,774 in 2025.

Minamisoma city in its current form was created on January 1, 2006, through a voluntary merger of Haramachi city, Kashima town and Odaka town. In this merger, these former cities and towns each became districts of Minamisoma city. A public vote was held to determine the name of this new municipality with the final choice Minamisoma, which translates to ‘South Soma’. This name refers to its proximity south of Soma city, and more widely to the Soma clan of samurai that previously ruled over the region. Of the merged area, Haramachi district has the largest population (42,108 in 2018), and the most businesses and industries, as well as housing most of the Minamisoma city public services including the city library, cultural centre, and city museum. Odaka district (population 8034 in 2018) and Kashima (population 10,442 in 2018) have fewer shops and more of the district is comprised with farmland. Kashima district is also home to the only fishing port in Minamisoma, with a small fishing industry that operates around it. The Minamisoma city hall is located in Haramachi district, with Odaka district and Kashima district having district offices. All districts have their own primary and junior high schools.

There are limited sources that describe public reactions at the time of the 2006 merger. However, residents from all three districts of the city expressed that the merger felt ‘incomplete’ across interviews conducted in 2018. This was particularly emphasised in relation to government decisions made during the 2011 disaster.

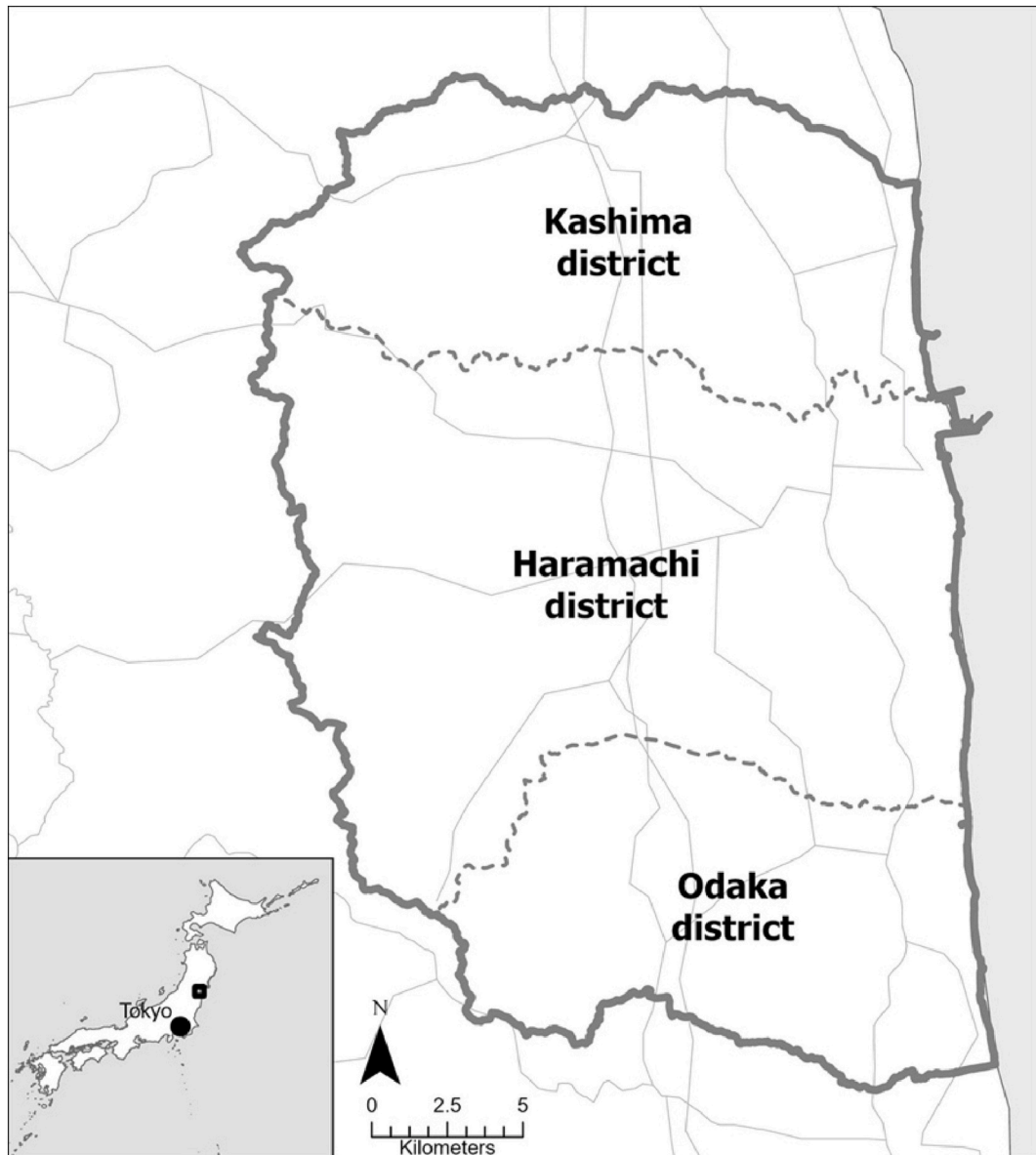


Fig. 4. Map of Kashima, Haramachi, and Odaka districts within Minamisoma City, Japan.

3.3.2. Area definitions during disaster

On March 11, 2011, Minamisoma experienced the Great East Japan Earthquake, and the city's coastline was hit by the subsequent tsunami. When the tsunami led to explosions at Fukushima Daiichi Nuclear Power Plant, located 11–38 km south of the city, evacuation orders were given to parts of Minamisoma. On March 12, all areas within a 20 km radius of the power plant were ordered to evacuate by the Japanese Nuclear Emergency Response Headquarters. This 20 km radius aligned nearly perfectly the boundary line around Odaka district (former Odaka town), with almost all of Odaka now falling into the mandatory evacuation zone. On March 15, the 20–30 km radius of the power plant were ordered to shelter indoors and on April 21 this order was updated to refer to the 20–30 km radius as a ‘planned evacuation zone’ with residents told to remain indoors and be prepared to leave [64]. This 20–30 km radius area covered Haramachi district of Minamisoma (former Haramachi city), and a small portion of Kashima and Odaka districts (former Kashima town and Odaka town). The majority of Kashima, however, was outside of formal evacuation orders. In reality, many people evacuated regardless of the orders given to their area, and the population of Minamisoma reduced by 71,571 before the disaster to around 10,000 in the first month [64].

While the evacuation areas were rezoned over the years, and lifted for all areas of Minamisoma in July 2016, many people continued to refer to the initial 20 km radius and 20–30 km radius when reflecting on the disaster in interviews conducted in 2018, showing the continued salience of this boundary. Residents directly noted that these boundary lines, which mapped on to the pre-

merger municipal boundaries, led to a sense of undoing the merger or ‘going back to the start’:

... I spoke earlier about how Odaka District merged, but to put it bluntly, lines were drawn between the 20 km radius and the 30 km radius, and in the end it was kind of like, like we had gone back to the start. They don’t de-centralise, but Kashima, Haramachi and Odaka are like, each of them are like, singular, it feels like they’ve come to be separated. (Resident of Haramachi District, Minamisoma)

The 20 km radius and 20-30 km radius boundaries had additional implications in determining eligibility for direct financial compensation from the Japanese government and Tokyo Electric Power Company (TEPCO), which were based on the evacuation orders given to areas of residence. In areas that received mandatory evacuation orders (Odaka), residents were able to access the most compensation, while residents who received planned evacuation orders (Haramachi) were eligible for a lower amount. Residents of areas that did not receive evacuation orders (Kashima) were not eligible for direct compensation, despite the fact that widespread evacuation had occurred from all areas, regardless of whether there was a formal order or not.

Residents of all parts of Minamisoma directly brought up the creation of the boundary lines for evacuation orders, which became boundary lines for compensation, as the creation of social difference in the area. This was particularly raised by residents of Kashima (as below), who were largely ineligible for direct compensation, but notably residents of Haramachi and Odaka also reflected on the decision as unfair.

... they’ve made a boundary here, over there they have compensation and live elegant lives, and over there, there’s nothing, even in the same environment, it’s that kind of entanglement with money. (Resident of Kashima District, Minamisoma)

In this way, the boundary lines were seen to insert a sense of difference, separating people even when they were all living through a similar context of disaster impacts. The creation of boundary lines through the disaster was seen by residents as causing division.

[The areas of Minamisoma], they’ve been divided into parts by this disaster. (Resident of Odaka District, Minamisoma)

Discussion of area boundaries that define compensation have been ongoing. The mayor of Kashima district engaged in over 10 years of negotiation with TEPCO, pointing out that ‘the reality of evacuation did not change for those within or outside the 30 km radius’ [65]. However the documented disparities in compensation between each part of Minamisoma have continued. In 2022, guidelines for additional compensation were revised, yet continued to differentiate between the areas of Minamisoma in the same way, tracing back to the 20 km and 20-30 km boundaries, and –even if unintentional– replicating the former municipal boundaries. Media reports discussing the decision on compensation eligibility for 2022 additional payments as ‘a revival of discontent and division’ [65].

The city of Minamisoma continues to exist as a merged municipality, yet residents suggested that it did not ‘feel’ merged in reality:

I guess we say that they have merged, but in the end, people from each place, it seems like maybe they feel the same way they did before the merge. (Resident of Haramachi District, Minamisoma)

In this way, the merger was a salient theme in how residents interpreted the compensation policy after the disasters, referenced repeatedly. The full implications of this sense of division, and how long-term disaster recovery will be experienced in a place that has been ‘divided into parts’ by governance decisions, remains unclear.

3.4. Case comparison

Comparing the cases reveals similarities and differences (Table 1). One immediate difference between the cases is temporal. In the Snowy Valleys, there were 3 years between the merger (2016) and disaster (2019), in Kawamata there were 56 years between the merger (1955) and disaster (2011) and in Minamisoma there were 5 years between the Merger (2006) and disaster (2011). Each case, therefore, presents different temporal dimensions for considering how mergers affect disaster experiences. However, merger timing alone does not appear to be a main determinant of what happened in these cases. Rather, a core commonality was that emergency management practices replicated the pre-merger boundaries (Table 1). Arguably the most salient similarity seen across cases was that evacuation orders were given in a way that evoked pre-merger area definitions across all cases. If the old boundaries had only existed in social memory, this might have been a different situation. However, residents saw these boundaries come to life in different emergency management practices which distinguished their communities on the basis of pre-merger boundaries. This includes in terms of evacuation orders (all cases), in determination of which areas firefighting services defended and which they deemed ‘undefendable’ (Snowy Valleys), in compensation eligibility (Minamisoma) and in recovery projects (Kawamata, Snowy Valleys). Regardless of whether it had been 56 years or 3 years since the merger, these differences were noticed. There was prominent anger, sadness, perceived inequity and a sense of difference.

The structure of power behind the emergency management decisions observed here deserves further attention. In these cases, we were unable to access data on internal power structures or fiscal allocation rules of each merged local government, or the way that external emergency management agencies at the state, prefecture or federal level interacted with them. These cases highlight that post-merger governance structures in emergency management is area in need of further research.

Finally, there were differences seen across the cases in sentiments about demerging. We did not identify any suggestions of a demerge in Kawamata or Minamisoma. However, in the Snowy Valleys, a community group calling for a demerge was established after the disaster. In 2025, the public voted 87% in favour of the demerge, which has now been formally set to take place in 2028. This difference may reflect that the mergers in Kawamata and Minamisoma were voluntary, while the recent and forced nature of the Snowy Valleys merge may have led to a particularly strong desire to demerge.

Table 1
Comparison of case studies.

	Snowy Valleys	Kawamata	Minamisoma
Location	New South Wales, Australia	Fukushima, Japan	Fukushima, Japan
Date of merger	Merged on 12 May, 2016	Merged on March 1, 1955. Withdrew from an additional merger in 2004 after strong public opposition.	Merged on January 1, 2006
Forced or voluntary merger	Forced	Voluntary	Voluntary
Disaster	July 2019-March 2020 'Black Summer' Bushfires	March 2011 Great East Japan Earthquake and nuclear disaster	March 2011 Great East Japan Earthquake, tsunami and nuclear disaster
Time between merger and disaster	3 years	56 years	5 years
Use of pre-merger boundaries in disaster management decisions	Evacuation orders were given to different towns separately, replicating the pre-merger boundaries. These orders were communicated late to residents of a smaller town (Batlow). While larger towns were defended proactively, Batlow was told their town was deemed 'undefendable' by state firefighting services. Disaster recovery funds intended for the entire LGA were largely centralised to the larger town of Tumut.	Evacuation orders only given to Yamakiya district (former Yamaikya village), but not the rest of Kawamata town, replicating the pre-merger boundaries. Yamakiya is mentioned separately to Kawamata town in the mayor's plan for recovery. Residents of Yamakiya reported being treated differently than the rest of Kawamata, and felt being told to 'do things themselves' by the local government.	Mandatory evacuation orders were given to the majority of Odaka, 'shelter indoors' orders (later revised to 'planned evacuation') given to the majority of Haramachi) and no official evacuation orders given to the majority of Kashima, replicating the pre-merger boundaries. Financial compensation was based on the evacuation orders, causing differences in access to financial support despite the fact that widespread evacuation occurred from all areas.
Social experiences	Inequity was perceived in how the State-level emergency managers treated larger and smaller parts of the merged LGA. Anger about the merger was raised repeatedly in community disaster recovery meetings. Anger increased further when recovery funding was awarded to the largest town in the merged LGA.	The evacuation orders and recovery planning intensified a sense of difference between Yamakiya and the rest of Kawamata. Residents expressed that they felt Yamakiya was seen as a burden to Kawamata town, and sadness that their hometown was disappearing. Residents reported a sense of 'othering' of Yamakiya district. Community divisions were reported as one of the largest concerns for Yamakiya residents in a 2020 survey.	Residents noted a sense that the evacuation boundaries 'undid' the merger and separated the area. The boundary lines for evacuation, and compensation eligibility, were continuously brought up by residents as creating social differences. Revised compensation guidelines in 2022 were described as causing a 'revival of discontent and division' when they continued to use these area boundaries. A resident reports that people 'feel the same way they did before the merge'.
Demerging	A community group calling for a demerger was formed after the disaster. In 2025, 87% of residents voted in favour of a demerger which has been formalised and is set to take place in 2028.	Not observed	Not observed

4. Discussion

We present these revelatory cases on area mergers and their role in disaster experience based on their insight into complex social phenomena that have been, to a large degree, understudied in disaster studies. Our data shows that disasters, and the decision-making process on formal area boundaries, disrupt not only resourcing but also 'rupture' social fabric, identity and sense of belonging. Indeed, administrative boundaries and governance decisions in these cases unexpectedly shaped recovery experiences, revealing their role as active forces in post-disaster social dynamics. Emergency management decisions, where boundaries were drawn between areas, were seen by residents to interact with historical pre-merger boundaries. In some cases, this perpetuated old power relations or 'us vs them', seen between previously independent areas. These findings mirror evidence from non-disaster settings. Residents of smaller areas merged with larger ones lose political power and 'become a minority *within* a merged municipality' (p 561) [66]. This is even more the case in regions where colonialism has been active [58]. Indeed, as the traditional lands of the Ngarigo people, the Snowy Valleys may experience further exacerbation of social rupture due to conflicts between Indigenous conceptions of place and administrative boundaries.

Decisions about which areas to protect and which areas to deem 'undefendable', for example, Batlow, were seen in the present cases as favouring larger parts of a merged local government area (Snowy Valleys case), and in some cases centralised funding for recovery projects to larger parts of the merged area (Snowy Valleys and Kawamata). Citizen awareness of these phenomena contributed to a movement calling for a demerger in the Snowy Valleys. On the other hand, in Kawamata and Minamisoma, residents felt that the boundaries drawn during the disaster had led to a sense of 'going back to the start' and undoing the merger, even when it remained formally intact. In these cases, there was profound disruption to community life that did not simply occur from the hazard event, but from governance decisions on area boundaries. Given that there is ample evidence on the importance of social cohesion, connection and belonging to disaster recovery [9,67,68], and to enabling community-based disaster resilience [69], we identify that local mergers can contribute to social rupture during disasters. As forms of governance that influence how people experience and understand their surroundings, we underscore the need for further attention to other 'neutral' governance decisions, which may not be labelled as

relating to disasters but can have extensive effects in community wellbeing and capacity to recover from disasters.

Connection to place can influence the way individuals imagine the future and prepare for disasters [12]. However, it is unclear what this looks like when connection to place has been altered by a prior merger and then further altered by governance decisions that created further boundaries during a disaster. Some have gone so far as to argue that having a shared sense of place should be considered as an intangible asset after disaster, and losses to sense of place should be measured and monitored as intangible loss of assets post-disaster [70]. At a smaller social scale, similar dynamics have been described in families through Boss' theory of ambiguous loss [71]. Such loss refers to situations in which loss remains unclear, such as when a loved one is physically absent but psychologically present, or vice versa. This uncertainty can disrupt the recovery process and complicate coping and decision-making. Extending this perspective to the community level, the present findings suggest that changes in administrative and social boundaries may produce a comparable form of ambiguity in people's sense of place. The present findings suggest that the idea of environmental losses reflected in the UNDRR definition of disaster should not only focus on natural and cultural environments, but how these environments come together to develop ideas of a community's social geography, which they will undoubtedly need to rely on in times of disaster. In this context, the potential impact of mergers and other forms of government decisions on formal area boundaries, and on relationality, belonging and shared sense of place, are deeply deserving of further study.

It is possible that disasters may not be considered at the time area mergers are proposed or implemented. In the Snowy Valleys, the case used to financially and logistically justify the merger did not assess disaster risk or hazard risk, and consideration of the effects of the merger on the community in times of disaster were also absent from the plan [21]. From a financial perspective, local government mergers can reduce the total amount of disaster risk reduction funding that an area is eligible for, including funds for mitigation and preparedness, relief and recovery. For instance, in Australia, each local government area can make one application for funding based on hazard type, severity and damage, not by population size. In Japan, a series of case studies have found that local government mergers harmed capacity to prevent and prepare for disasters, illustrating problems that occurred in disseminating information, providing support services, and preserving local autonomy during decision-making in disaster recovery – for instance, in where to build temporary housing shelters within a merged municipality [72]. While the dominant justification for mergers seen across high-income countries has been made on the grounds of economic efficiency [18], the present findings highlight a danger to mergers only taking place on economic grounds. We suggest the need for a more nuanced view on how mergers could affect emergency management, in both government planning, merger policies, and in research.

4.1. Limitations

This research has both strengths and limitations. Revelatory case studies were conducted through multiple sources of data after each author realised that area mergers and historical boundaries were raised in a repeated and unsolicited manner in other disaster research projects they were involved in. The selection of cases is therefore limited in that it drew on opportunistic sampling, rather than theoretical sampling, and the analysis of existing data rather than new data collection. However, the unexpected prominence of this topic across existing work suggested that further examination would bring forth at least two benefits; one being the ability to immediately deepen an understanding of this phenomenon through existing data, and two being the way these existing cases allowed for us to pull apart contextual differences in how mergers were raised in disaster experiences in places with different social, cultural, and historical contexts.

It should be recognised that different forms of data were analysed for each case, in line with Bartlett and Vavrus' [32] inductive approach to qualitative comparative case studies which considers that data collection methods should emerge from the particularities from each site while remaining theoretically connected. The Kawamata case study is limited by the use of only secondary data. However, this decision was made on the basis of consultations with key informants in Kawamata, and follows increasing recognition of the validity of ethical and rigorous practices in re-using secondary qualitative data [49]. The Snowy Valleys case study was focused on interviews with recovery practitioners and media analysis. It should also be noted that many of these practitioners were also local residents who had lived through the disaster (representing a 'dual role' that is often seen in disaster recovery research in Australia [73]). There was limited direct access to the perspectives of other local residents.

All cases were from high-income countries, and should not be generalised to low income countries. Due to the re-use of data, there are limitations around the degree to which marginalised groups, including Indigenous communities, are represented. Future studies integrating Indigenous understandings of place in relation to formal and informal boundaries that are enacted in disasters would be beneficial, and could complement existing initiatives that are making extraordinary contributions to understandings of Indigenous disaster experiences [74].

Finally, we have reported ongoing updates on each case where possible, however we acknowledge that the divisions observed in may likely continue to evolve over time.

5. Conclusion

In this study we find that prior local government mergers contributed to experiences of social rupture amid recovery. In case studies from Australia and Japan, residents repeatedly brought up past mergers, unprompted, when describing changes in the social fabric of their communities. Residents drew on mutually constitutive understandings of past and present area boundaries when they reflected on what happened to their community during and after disaster; the boundaries enacted in disaster management, including the boundaries that defined evacuation areas, areas to defend from fire and which to deem undefendable, and areas deemed eligible for financial support, were seen by local residents in direct relation to past mergers. In some cases, the boundaries set by emergency

management decisions were seen to ‘undo’ prior mergers by replicating past municipal lines and reinforcing a sense of difference (Minamisoma), and in other cases, they were perceived to unfairly benefit larger parts of a merged area leading citizens to call for a formal demerger (Snowy Valleys). Disappointment, sadness, and a sense of a lack of fairness, were frequently expressed across these accounts.

From these findings, we present three recommendations. There is a need for awareness that prior governance decisions such as mergers –even when not labelled as disaster-related policy–can affect how individuals and communities experience disasters for years and decades. First, we recommend that emergency management agencies engage in continued knowledge-building of local issues, including any past mergers and lingering social divisions in the communities where they work, to directly inform practice. Second, we recommend that any merger proposal should be required to include a disaster plan to explicitly outline how the merger would affect disaster funding mechanisms, where power would be located to make decisions, and how state or national level emergency management teams would work with the merged entity (e.g., would they only consult with larger towns, or all parts of the merged area?). The post-merger survey by the Japan Municipal Research Centre has identified access to municipal offices, regional disparities, and difficulties in hearing residents’ voices as major post-merger issues, while only a minority of municipalities recognised disaster-preparedness benefits from merger [75]. Likewise, disaster planning was not a significant part of any of the merger proposals referenced in this study, and we find it highly probable that many local governments may be merging without fully realising the implications it carries for them, and their constituents, in the case of a disaster. Finally, we recommend further research into other forms of government decisions that may be contributing to social rupture in disasters. Policy decisions related to poverty, education, housing and health all have the potential to influence what happens during a disaster, and indeed, whether a hazard becomes a disaster [76]. Further studies would be of benefit that trace the process by which these policies may affect lived experiences and outcomes of disasters.

In his seminal work, Erikson [29] stated ‘... most of the traumatic symptoms experienced by the Buffalo Creek survivors are a reaction to the loss of communality as well as a reaction to the disaster itself ... derived from the shock of being ripped out of a meaningful community setting as well as the shock of meeting that cruel black water’ (p 193–94). Erikson showed that it is not just the hazard –the floodwater– but also the loss of community that can cause harm. While the present study does not assess trauma, it draws attention to the ways that governance decisions such as local government mergers may contribute to the loss of communality that Erikson first described. There is a need for further attention to governance decisions such as mergers, which may be seen as unrelated as disasters, yet which these case studies show can come to shape experiences of disasters and the breakdown of social cohesion that occur in their aftermath.

CRediT authorship contribution statement

Claire Leppold: Conceptualization, Data curation, Formal analysis, Writing – original draft, Writing – review & editing. **Timothy Heffernan:** Conceptualization, Data curation, Formal analysis, Writing – review & editing. **Isamu Amir:** Conceptualization, Data curation, Formal analysis, Writing – review & editing. **Aya Goto:** Conceptualization, Data curation, Formal analysis, Writing – review & editing.

Declaration of competing interests

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Timothy Heffernan reports financial support was provided by New South Wales Government (Bushfire Local Economic Recovery Fund, Grant 0890). Claire Leppold reports a relationship with Office of the Inspector General for Emergency Management that includes: employment. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

We extend our gratitude to all participants who took part in the original studies that were drawn on in these case studies. We would like to thank Mr Tom Savige for producing the maps used in this article. We would additionally like to thank Dr. Yujiro Kuroda and Ms. Kurumi Kanno for their advice on the Kawamata case. We thank Dr Yuki Shimada and Dr Toyoaki Sawano for their assistance with the Minamisoma case. Research in Minamisoma was conducted as part of Claire Leppold’s doctoral research supported by a University of Edinburgh PhD Scholarship and a scholarship from the Medical Governance Research Institute. The research in the Snowy Valleys led by Timothy Heffernan was funded by the New South Wales Government (Bushfire Local Economic Recovery Fund, Grant 0890).

Data availability

The data that has been used is confidential.

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