

Toxic torts as compensation: Legal geographies of environmental contamination litigation

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Abstract

Residents living in close proximity to contaminated sites may experience adverse effects from financial losses and property devaluation, leading to poor mental health and physical illnesses—effects that may require compensation. The most common legal process of seeking compensation is the toxic tort—litigation pressed on the basis that contamination has harmed the victims. Several recent toxic tort class actions in Australia brought by residents living in areas affected by contamination from per- and poly-fluoroalkyl substances (PFAS) exemplify that process. Two such actions, those at Williamstown and Richmond, provide an opportunity to explore how toxic torts currently function as a means to secure compensation, whether they mitigate the harms of the contamination and considering how spatio-legal manoeuvres may shape the litigation. In this article, we use a legal geography approach to analyse how plaintiffs' bodies, litigants' properties, and the state are constructed and represented by parties involved in these toxic torts. Legal geographers contend that examining the spatio-legal manoeuvres made via litigation can make visible the effects of legal action on those involved and draw out how the law and its instruments may shape places and communities. Toxic tort class actions have allowed those affected by the contamination to be heard and receive some compensation. However, we argue that they do little to alleviate plaintiffs' concerns about the effects of contamination on their health, properties, and the environment. The findings have significance given that torts will likely play an increasingly prominent role in dealing with such challenges.

KEYWORDS

environmental contamination, justice, legal geography, litigation, per- and poly-fluoroalkyl substances (PFAS), toxic torts

1 | INTRODUCTION

The continuous release of chemicals and pollution into the environment over the past two centuries will likely pose one of humanity's most significant challenges (Jarrige et al., 2020). Estimates suggest that around 16% of human deaths globally in 2015 were caused by exposure to air, water, or land pollution (Landrigan

et al., 2018). Significant financial, political, and legal resources will be needed to mitigate these challenges (Speth & Haas, 2006). Yet, governments and regulatory bodies responsible for forming and implementing international and national regulations to prevent contamination have struggled to keep up with the rate at which new and potentially harmful chemicals are produced and released into the environment (Barroso

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et al., 2019). The authority of such bodies has also weakened over the past two decades (Lockie, 2020; Speth & Haas, 2006). Considering increasing potential pollution and decreasing regulatory involvement, it is likely that the number of people worldwide exposed to environmental contamination will grow.

Those exposed to contamination can experience a range of adverse outcomes such as health effects, financial losses and property damages (Prior et al., 2019). Although remedying these effects typically involves mitigating the contamination, in more severe cases it may be necessary to compensate those affected (Edelstein, 2018). Compensation can be ordered by an environmental regulator—although that is unlikely—or sought by those affected via litigation (Abbot, 2005). According to Edelstein (2018, p. 220), “the most prominent legal approach in contaminated communities is the ‘toxic tort’ ... evocatively named by combining a victim’s deliberate harm or punishment (that is, their ‘torture’) with the damage to people, property, and/or the environment due to the toxicity of a product, process, or substance.” Successful tort claims result in the polluter paying to compensate those affected, assign responsibility for the contamination and discourage similar actions in the future (Goodie, 2001, 2008). Such legal action will likely increase in frequency globally because of governing bodies playing a decreasing role in regulating against environmental harms and recent successes in the tort realm (Zorn et al., 2019). In Australia, there have been several cases of plaintiffs succeeding in toxic torts, particularly in class actions. For instance, in *Wheelahan v City of Casey* (2011) VSC 215, a group of residents were compensated for damage to their property and a decrease in property values resulting from the migration of gas from a nearby landfill (see Cashman [2005] and Dellavedova [2021] for summaries of successful toxic tort cases in Australia). It is essential to understand whether toxic torts protect and adequately compensate residents living with contamination, especially as there has been little exploration of this matter (Picou et al., 2004). Rather, the legal literature has tended to examine the legal mechanisms that influence the outcomes of toxic tort cases (see, for instance, Anderson, 2001; Cashman, 2005; Dellavedova, 2021; Lin, 2004; Miller, 1998).

We propose that legal geography offers a suitable lens for exploring the extent to which toxic torts mitigate the harms experienced by those affected by contamination. Legal geographers contend that the law and space have a co-constitutional relationship with one another—that law shapes space and vice versa (Braverman et al., 2014). Unsurprisingly, litigation proceedings have consistently been viewed as an opportunity to explore the dynamics in the relationship between law and space. As Jepson (2012, p. 616) has suggested, “litigation is

Key insights

We report on two toxic tort class actions in Australia arising from environmental contamination by per- and poly-fluoroalkyl substances (PFAS). Using a legal geography lens, we examine the torts as a form of compensation for those affected by the contamination. We find that the litigation allowed those affected by the contamination to be heard and their claims examined. However, the means of providing compensation was not necessarily distributed equally and justly among recipients, and their concerns relating to the health effects of the chemicals and damage to the environment remain unaddressed.

part of the practical politics to reconstitute spatial meaning and material territories.” Such work has unravelled how space is considered by those involved in legal decision-making, similarly to other legal literature, but has also extended to examinations of how litigation may shape place and spatial processes (Jepson, 2012; O’Donnell, 2016; Turton, 2015). Considering the spatio-legal representations within litigation can make visible the effects on those involved. Exploring toxic torts through a legal geography lens, then, could show how litigation proceedings shape contaminated communities and reveal whether the harms experienced as a result of contamination are adequately compensated for and mitigated.

We seek to examine how contaminated communities are affected by toxic tort litigations emerging from the per- and poly-fluoroalkyl substance (PFAS) contamination around two Australian Defence Force (Defence) bases, namely, Williamstown and Richmond, in New South Wales (NSW). To begin, in Section 2, some background on the regulation of environmental contamination and toxic torts in Australia is provided. Then, in Section 3, previous legal geography approaches to litigation and environmental contamination are explored to construct a framework to analyse the two case study sites. In Section 4, events leading up to the PFAS contamination at Williamstown and Richmond are elaborated on, and Section 5 outlines the methodological approach. Section 6 presents the results through the legal geography lens, focusing on how the litigation shapes and is shaped by spatio-legal processes operating through plaintiffs’ bodies, litigants’ properties and the state. Ultimately, in Section 7, we propose that the legal geography framework offers insights into the spatio-legal repercussions of toxic torts and how those affected by contamination are further influenced by such litigation.

2 | REGULATION OF ENVIRONMENTAL CONTAMINATION AND TOXIC TORTS

The regulation of environmental contamination in Australia has largely taken a decentralised and responsive approach. Following international momentum to regulate environmental pollution, such as through the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal 1989*, the Australian Government began to take measures to manage contamination in the early 1990s (Lipman, 1990). The *Australian and New Zealand Guidelines for the Assessment of Contaminated Sites 1992* was the Australian Government's first implementation, which later evolved into the *National Environment Protection (Assessment of Site Contamination) Measure* (NEPM) in 1999. The NEPM set national standards for levels of contaminants and pollutants across Australia but left legislative responsibility for managing contaminated sites with the states and territories, who individually enacted relevant legislation across the 1990s and 2000s (Lyster et al., 2021; Taylor et al., 2014). When contamination occurs or is present on land under the jurisdiction of the Australian Government, however, legislative and regulatory responsibility passes from the states and territories to the federal government. For example, PFAS contamination in Australia has happened on and around Defence bases, which are under federal jurisdiction, leading to the Federal Government having regulatory responsibility. In such cases, the *Environment Protection and Biodiversity Act 1999 (Cth)* (EPBC Act) is the key piece of legislation for protecting the environment. However, the EPBC Act usually plays no role in regulating contamination and has little in the way of directing how to manage contaminated sites.

Although statutes remain the principal legal means for preventing and managing environmental contamination in Australia, litigation is beginning to arise more frequently (Johnson et al., 2015). Litigation can emerge when the polluter fails to meet the requirements of a state's environmental regulator, after which the regulator may prosecute, or when a person or group of people wish to commence criminal or civil proceedings based on damage to their person or property. The state's environmental regulators can be hesitant to prosecute for such breaches (Newman, 2015), perhaps rendering toxic torts brought by the affected individual/s the more likely avenue for seeking compensation. Increasingly, toxic torts have taken the form of class actions, or collective proceedings (Dellavedova, 2021), as a result of environmental contamination tending to affect many people, drawing whole communities into potential litigation (Cane, 2001). Individually brought proceedings can also be very costly—toxic torts have the potential to be long-lasting and complex, and thus expensive, and class actions allow costs to be split or,

more often, funded by a commercial litigation funder (Dellavedova, 2021).

Achieving justice through toxic torts can be challenging. In Australia, legal scholars note that it is difficult to prove a connection between the presence of contamination and injury/harm in toxic torts, as proof that the contaminant is harmful, that harm has occurred and that it was caused by exposure to the contaminant are required (Goodie, 2008, 2011; Lee, 2000). Physical illnesses often take many years to develop and are not usually unique to exposure to a particular contaminant, making it challenging to draw definitive linkages between exposure and health outcome (Atkins et al., 2006). Courts have even discounted expert evidence from public health professionals because the law did not recognise epidemiological methodologies as sufficiently accurate (Goodie, 2011; Kennedy-Breit, 2017). Claims relating to property damage are perhaps more straightforward to test as the amount of time between cause and effect is shorter, and the damage is easier to measure than personal injury claims (Cane, 2001).

A small body of literature has explored how toxic torts may affect litigants and contaminated communities. Edelstein (2018) has referred to toxic torts as “limping litigation” because they may extend for long periods, dragging out the time it takes to reach a settlement or conclusion. Being continuously exposed to legal proceedings can exacerbate litigants' mental anguish and distress, on top of whatever effects they are claiming they experienced. For those living with environmental contamination, litigants have been reported to experience more severe adverse psychological outcomes than non-litigants (Greve et al., 2005; Picou et al., 2004). Edelstein (2018, p. 205) has also suggested litigants hold “expectations that the lawsuit will rectify an injustice, assign responsibility, or remedy the situation,” and when these remain unfulfilled, it is distressing. Litigants also must relive painful memories continuously, while opening up their private lives to the courts. That said, litigation still offers an opportunity for the voices of those who have been wronged to be heard and for some form of justice to be achieved, especially when other means of attaining compensation are even more limited (Dellavedova, 2021).

Beyond the effects on litigants, Zorn et al. (2019, p. 24) have noted that there may be “limited utility of tort litigation in correcting widespread environmental harms.” Although funds from a successful tort claim may be dedicated to remediating the contamination, there is little guarantee that remediation will happen in a timely or successful manner (Zorn et al., 2019). If the risks presented by the contamination are not adequately addressed, those affected by the contamination will continue to be exposed to its harms. Such potential adverse effects of torts on the local community and environment warrant investigation.

3 | LEGAL GEOGRAPHY AND TOXIC TORT LITIGATION

To construct a legal geography framework for examining toxic tort litigation, it is necessary to examine existing approaches. Legal geographers have consistently emphasised the utility of examining litigation for unravelling the connection between space and law. Such examinations are useful not only for unravelling the spatial logic and discourse used during legal proceedings but also for revealing how litigation may influence the spaces and bodies of those involved (Jepson, 2012; O'Donnell, 2016). Indeed, court proceedings are such a pivotal part of legal geography research that Jeffrey (2019, 2020, 2021) has released a series of three reviews examining the various legal geographic approaches to analysing their functioning. Across the reviews, Jeffrey explores both court materiality, bodies, and evidence and the ways in which legal geography research draw out the construction, formation and representation of each theme throughout court cases. Each theme (court materiality, the body and evidence) is considered not only an influential factor in shaping the manifestation and outcome of the legal proceedings but also a site altered by events and actions emerging throughout the case.

There has also been an insightful legal geographic examination of toxic torts that sheds light on the relevance of such an approach to environmental contamination litigation. Atkins et al. (2006) have investigated litigation arising from arsenic contamination in Bangladesh and drawn attention to the complex relationship between body and environment, or exposure and illness, that toxic torts examine. They propose that it is difficult to meet the burden of proof required in court cases to determine whether physical illness results from the defendants' polluting of the environment or something else. They also suggest that certain bodies, those that are poor or illiterate, have less access to join toxic torts and are thus denied an avenue of environmental justice claims.

The approach taken by Atkins et al. (2006) largely aligns with Jeffrey's (2020) review of bodies in legal geography. For instance, Jeffrey contends that the law is "a construction that works through and is established by bodily practices ... Critical perspectives from legal geographers and beyond have long identified the different positionings and treatment of bodies within evidential processes, shedding light on the mechanisms through which legal processes grant certain bodies the authority of interpretation and leaving others left disillusioned, silenced or ignored" (Jeffrey, 2020, p. 1006). In broader environmental contamination research, the notion that only certain bodies are afforded the attention of the law has also been observed. For instance, Davies (2019) has noted that those exposed to contaminants are often rendered out of sight by the law, as

their voices and perspectives are ignored and dismissed in legal processes and environmental justice claims. Then, paying attention to how plaintiffs' bodies are positioned and represented by those involved in litigation is necessary for determining how toxic torts unravel and whether or not justice is achieved.

Plaintiffs' property is another element closely examined by toxic torts, and one explored little by Atkins et al. (2006). As Kroll-Smith and Westervelt (2004) have suggested, toxic torts predominantly examine questions of both health and property. Exactly how property is represented in toxic torts and how it shapes the unravelling of proceedings have not yet been explored in legal geography. However, broader legal geographic research has consistently touched on the role of property in litigation. For instance, Blomley (2008) has noted that both plaintiff and defendant represent property in various discursive and physical ways throughout a legal proceeding relating to the changing boundaries of a river system, resulting in property being pivotal for the outcome of the litigation. He suggests that unravelling how property is handled in litigation can elucidate how the law reinforces certain power dynamics and the kinds of evidence the law affords. Legal geographers have often proposed that the law reinforces social norms and expectations, as Jeffrey (2019) has asserted, and privileges certain property relationships over others, particularly in litigation (O'Donnell, 2016). By examining how litigants' property is perceived and shaped by legal proceedings, the effects of litigation on contaminated communities can be unravelled.

The final concept explored in our legal geography framework relates to the regulatory bodies and government agencies involved in the court proceedings, referred to collectively as the state. Atkins et al. (2006) have observed that defendants in toxic torts tend to make spatio-legal manoeuvres to shape the outcome of the proceedings. By rendering their spatio-legal proximity, defined as the geographical and duty of care relationship between plaintiff and defendant, to the victims of the pollution further away, the defendants were able to minimise their responsibility for the contamination in the eyes of the law. In cases where the defendant is the state, a range of complex questions arise to do with self-regulation, responsibility and authority (Legg, 2021), as the state often has the authority to deem what evidence is admissible and even what is worthy of adjudication (Jeffrey, 2021). Given that the cases of contamination we explore revolve around the Australian Government's actions as the polluter, it is worth unravelling exactly how the state shapes and is influenced by the toxic torts.

Building from explorations of legal geography, court proceedings and research on contamination and toxic torts by Jeffrey (2019, 2020, 2021), we propose that examining the plaintiff body, litigant property and the

state contributes to unravelling toxic torts effects on contaminated communities and the environment. Our multiscale approach is particularly useful for unravelling the functioning of the law as it simultaneously exists and operates across these scales (Bartel et al., 2013; Gorman-Murray, 2011).

4 | PFAS CONTAMINATION IN AUSTRALIA

PFAS are a class of chemicals used in a wide range of products for their durability and fire resistance, giving them the moniker “forever chemicals” because they do not break down easily in the environment (Pelch et al., 2019). The chemicals are also considerably mobile, leading to detections of PFAS in remote places like Antarctica (Pelch et al., 2019). Exposure to high levels of PFAS in humans has been linked to various outcomes, including cancer, immune system dysfunction and kidney disease (Fenton et al., 2021). However, a recent Australian health study on the effects of PFAS exposure found limited evidence of physical health effects beyond elevated cholesterol levels, yet it also found an increased risk of psychological distress and mortality from heart disease for those living in a PFAS Management Area, as opposed to actual exposure to PFAS chemicals (Law et al., 2021). Historically, PFAS have been used in products ranging from furniture to non-stick pans to firefighting equipment. Since the 1970s, in Australia, Defence has practised putting out fires on its bases with a firefighting foam containing PFAS. These foams were used until the early 2000s, resulting in high levels of PFAS in the groundwater and soil surrounding some Defence bases (Kelsey-Sugg, 2019). In New South Wales alone, there are at least 25 sites with elevated PFAS levels in the soil or groundwater because of these practices, potentially extending to nearly 100 across Australia (Fellner & Begley, 2018).

Williamstown and Richmond are two suburbs in New South Wales, located on the outer edge of Newcastle and Sydney, respectively. The median weekly household income in 2016 in Williamstown was AU\$766, whereas Richmond was \$1,146, compared with the average across New South Wales of AU\$1,486 (Australian Bureau of Statistics, 2016a, 2016b). Each is home to a Defence base where these firefighting foams were used from the 1970s until the early 2000s. In September 2015, around 600 residents surrounding the Williamstown base were notified by the state’s environmental regulator, the NSW Environment Protection Authority (NSW EPA), that elevated levels of PFAS had been found in the surrounding area (Joint Standing Committee on Foreign Affairs, Defence and Trade, 2018; Virtue, 2015). Approximately 50 residents around Richmond were notified three years later, in

November 2018 (Falson, 2019; Joint Standing Committee on Foreign Affairs, Defence and Trade, 2018).

Land within the boundaries of Defence bases is under the jurisdiction of the Australian Federal Government, somewhat complicating the initial management period because Defence, as the polluter, could not be managed by the NSW EPA under the *Contaminated Land Management Act 1997* (see Legg, 2021). Eventually, it was agreed that the NSW EPA and Defence would work together, with responsibility for managing the site lying predominantly with Defence and the NSW EPA to offer support where necessary, resulting in Defence essentially self-regulating (Legg, 2021).

One of Defence’s responsibilities as manager of the two sites was to conduct stakeholder engagement, involving community meetings and the opportunity to update residents and other concerned parties on the state of the contamination and related remediation activities. These public meetings were run by Defence at Williamstown, beginning when the contamination was announced in 2015 and going until July 2019. Although initially occurring monthly, they did slow to yearly by 2018. A similar process unfolded at Richmond. Throughout the meetings, it became increasingly apparent that residents were becoming concerned about the extent to which they had been exposed to the contamination and the reduction of property values. Defence opened an avenue for compensation claims from residents, which provided residents with the ability to outline how the contamination had affected them financially. As of 2019, no claim for compensation had been successful at the two sites—and only one across the other sites around Australia (Page, 2019).

It did not take long for the first legal action to be launched on behalf of the residents of Williamstown in 2016—in the form of a toxic tort class action financed by a commercial litigation funder (Gregory, 2016). As noted by Justice Lee in *Smith v Commonwealth of Australia (No 2)* (2020), the class action alleged: “that the firefighting foam used on the RAAF [Defence] bases which contained PFAS was potentially damaging to the environment and/or potentially caused adverse health effects in humans, its use was unreasonable, and a reasonable person in the position of the Commonwealth would have taken various precautions in respect of the risk of harm posed by it.” Many residents in the contaminated zone, at least 400, signed up to be class action members (Vernon, 2016). The causes of action were nuisance (unreasonable and substantial interference with the use of land owned), negligence (Commonwealth breached a duty of care) and a breach of the EPBC Act (*Smith v Commonwealth of Australia [No 2]*, 2020). The negligence claim revolved around the financial losses and property damages residents experienced, as opposed to any personal injury or illness. There were three types of group members:

landowners, business owners and occupiers (those who lived on a property within the contaminated region but were not the legal owner). In March 2020, the class action was settled with the Australian Government set to pay residents AU\$86 million (Fellner, 2020b), with approximately \$44 million assigned to land value decrease, \$3.45 million for business loss, \$34.5 million for inconvenience, distress and vexation, and \$10 million for aggravated damages.

In October 2019, a second series of class actions were launched against the Australian Government, this time on behalf of eight sites, one of which was Richmond (*Haswell & Anor v Commonwealth of Australia*, 2020). Although the causes of action and claims were the same, one difference was that group members only consisted of those who owned property within the contaminated region before 12 December 2016 (Federal Court of Australia, 2020)—no business owners or occupiers were included. At the time of writing, the Richmond class action was ongoing.

5 | METHODOLOGICAL APPROACH

Outlining current methodological trends in legal geography, O'Donnell et al. (2020) suggested adopting a “case-study approach ... complemented by a range of empirical, normative, discourse and doctrinal analyses ... including interviews, ethnography and mixed-method surveys” (p. 7). Relatedly, we draw upon different forms of qualitative evidence in exploring PFAS contamination in Australia.

First, 16 interviews were conducted with 12 residents living around the contaminated regions and four government officials involved in managing the regulatory response. Those interviews ranged in duration from 45 minutes to 2 hours. They covered various topics, including how the litigation proceedings at both Williamstown and Richmond may have affected the contamination event. Interviews supplemented knowledge about the contamination and its management, and transcripts were thematically analysed to consider how residents and government officials understood PFAS contamination. The intention was to identify common themes that emerged in how participants talked about the litigation and how they may have influenced or been influenced by its manifestation, with particular attention placed on how participants discussed plaintiffs' bodies, properties and the state.

Second, we analysed a range of documents related to the contamination events and class actions, including government releases, such as the two reports released by the Joint Standing Committee on Foreign Affairs, Defence and Trade (2019, 2020) examining the management and remediation of PFAS sites across Australia, local and national media articles, case law

and court documents related to the two class actions—*Smith v Commonwealth of Australia (No 2)* (2020) and *Haswell & Anor v Commonwealth of Australia* (2020). These documents' contents were also thematically analysed to unravel how plaintiffs' bodies, properties and the state were viewed by those involved and shaped the outcome of the litigation. Collectively, the methods allowed an analysis of the litigation actions in line with the legal geography framework outlined previously.

6 | RESULTS

Here, we analyse the toxic tort litigation at Williamstown and Richmond, the cases of *Smith v Commonwealth of Australia (No 2)* (2020) and *Haswell & Anor v Commonwealth of Australia* (2020), by examining how the state and plaintiffs' bodies and properties are considered by those involved in the litigation and, in turn, by revealing how they influenced the torts.

6.1 | The plaintiff body

The bodies of the plaintiffs were contested considerably across the class actions, particularly as a form of evidence, even though the claims pressed were related to property. Throughout the Williamstown class action, *Smith v Commonwealth of Australia (No 2)* (2020), plaintiffs and defendants provided evidence and claims, in the courts and media landscape more broadly, on how PFAS had shaped the bodies and health of those exposed. For instance, the Australian Government's position at the onset of the Williamstown class action was voiced through the Environmental Health Standing Committee's (EnHealth., 2017, p. 1) proposal that “there is currently no consistent evidence that exposure to PFAS causes adverse human health effects.” Later an expert health panel set up by the Australian Government's Department of Health to examine the scientific evidence around PFAS exposure and health claimed that “though the evidence for PFAS exposure and links to health effects is very weak and inconsistent, important health effects for individuals exposed to PFAS cannot be ruled out based on current evidence” (Department of Health, 2018, p. 2).

Similarly, from a plaintiff perspective, participants were aware that it is difficult to demonstrate a link between a health outcome and exposure to PFAS:

I was one of the people who had cancer ... But see, we don't know that we got cancer from PFAS. We don't know that, and we can't prove it. And because we don't know it, and we can't prove it, we can't claim it ...

Proving health hazards result from exposure is a lot more difficult. (Williamtown participant)

Despite being aware of the difficulty of proving a link between ill health and PFAS, and that the claim of negligence related to financial losses as opposed to personal injury, plaintiffs recounted the bodily harms they experienced resulting from the contamination (Elias, 2019). As Justice Lee described in his case summary: “There are certain general themes that emerge. The first, most important and, if I may say so, moving aspect of the communications, is the dismay and tribulation expressed by group members as to their exposure to alleged harmful chemicals.” Conversely, the defendants pressed their own perspectives on how the plaintiffs’ bodies were affected by the contamination, emphasising scientific uncertainty.

In an Order on 2 October 2019, Justice Lee appointed an epidemiological expert to prepare a report on the toxicology of PFAS and address whether PFAS are “causative or potentially causative of adverse human health effects” (*Smith v Commonwealth of Australia [No 2]*, 2020). On 3 February 2020, the report was completed and the court ordered it be adopted as evidence. Although not publicly released, journalist Carrie Fellner suggested the report concluded there is “good evidence” that PFAS adversely affect some components of human health (Fellner, 2020a). Shortly afterwards, the Williamtown class action settled, and although the settlement did not relate to whether or not the exposure to PFAS caused personal injury to the plaintiffs’ bodies, residents were compensated a percentage of the settlement fund for the inconvenience, distress and vexation they felt (*Smith v Commonwealth of Australia [No 2]*, 2020). The fund received by each plaintiff was calculated by their owner–occupier status.

Another toxicological report was sought at Richmond on 1 October 2021 to identify whether any modification to the Williamtown report was necessary. Although the Richmond report is yet to conclude, and the class action is ongoing, it will be interesting to see if the proceedings take on a similar form to the previous class action.

Another way the participants reported that plaintiffs’ bodies influenced the manifestation of the litigation was by becoming a group member. That is, some bodies were granted a voice by partaking in the litigation, while others were ignored. As one participant indicated:

The class action, in particular, was quite divisive. That seemed to break people into two camps: people who were in it and those who weren’t ... A lot of people didn’t join, because, again, they didn’t even trust the lawyers. (Williamtown participant)

Another said that some residents had difficulties reading and writing, which may have shaped their decision to join the litigation out of mistrust for the lawyers. The Williamtown and Richmond class actions had an opt-out approach, where a potential group member must respond to the lawyers’ notice to register explicitly confirming their wishes not to be included as a group member. Although some who would have been left out of the class action otherwise may have joined, there was still an element of division created by the litigation’s existence.

Finally, it was common for those interviewed and the legal transcripts from the court proceedings to describe how the litigation had shaped the plaintiffs’ bodies. For instance, one Williamtown participant said that they witnessed a physical toll on those involved in the litigation, even tangentially:

Now, nobody speaks about it [the PFAS contamination] anymore. It’s like a taboo subject around here now ... I’d say it started probably around the time that it [the class action] settled. Everyone’s tired. They’re exhausted. (Williamtown participant)

Likewise, in his Orders on 5 June 2020, Justice Lee noted that “it is clear that the class actions have caused, and continue to cause, a good deal of vexation and angst to the group members involved.” Not only did plaintiffs’ bodies influence the litigation, shaping the way both plaintiff and defendant presented evidence and perhaps even the outcome of *Smith v Commonwealth of Australia (No 2)* (2020), but also their bodies were worn down and affected by the litigation.

6.2 | The litigants’ properties

The litigants’ properties also influenced the class actions. Both plaintiffs and defendants attempted to represent the properties of those affected by the contamination in ways that would benefit their case. For instance, at the onset of the litigation in 2016, the Australian Government’s perspective on whether the plaintiffs’ properties had been affected was as follows:

The Australian Government will further consider the matter of property acquisition once interim health reference values have been established and a detailed environmental investigation at RAAF Base Williamtown has been concluded. Until these activities are finalised, the Australian Government is not in a position to determine the actual level of risk for existing

property use. (Australian Government, Joint Standing Committee on Foreign Affairs, Defence and Trade, 2018)

Then, after the environmental investigation at Williamstown had been completed, the Australian Government announced that there would be no property buybacks, instead opting to manage the contamination from the Defence base (Fellner, 2018). As one government official participant noted, the “commander [of the Defence base] at the time said, ‘look, if it has come from our land, we will fix it’. And, of course, when the politicians and the bureaucrats reassessed that, they changed that to just working on their land.” For Defence, the effects of the contamination on and the risk it posed to litigants’ properties were too small to warrant compensation.

Residents described their properties and the effects of the contamination in different terms. As one Williamstown resident reported: “Our home and land is worthless. Recent real estate agent appraisals indicate that there are NO buyers for this area due to the contamination and we would have to virtually give it away” (Joint Standing Committee on Foreign Affairs, Defence and Trade, 2018). In contrast to Defence’s representation of residents’ properties, litigants drew attention to the effects of the contamination on reducing property value and removing the possibility of selling.

As with the toxicology report, Justice Lee ordered a land valuation report for Williamstown in order to address what the market value of a particular property in the contaminated region was as of 2 September 2015, what its current market value was at the time the report was written, and what its current market value would be if the PFAS contamination did not exist (*Smith v Commonwealth of Australia [No 2]*, 2020). The report found that property prices had decreased by at least 15% (Page, 2018). This devaluation was not evenly spread throughout the region, so the overall decrease was “determined by placing each land owner group member into a relevant zone and applying various percentage deductions to land valuation figures obtained by the applicant” (*Smith v Commonwealth of Australia [No 2]*, 2020). The distribution of the settlement fund for land value decrease was determined in a similar manner, with the damages calculated by considering whether a plaintiff’s property was on bore water and its land zone (rural, residential or commercial). At the time of writing, a land valuation report was also being conducted for Richmond.

Property also influenced the class actions by determining who could become a group member. The Williamstown class action was open to property owners, business owners and occupiers. The Richmond action was stricter: only property owners could sign up as group members. Participants reported that this seemed

unfair, given that it was still possible for those who did not own properties to experience high levels of exposure to PFAS:

[My friends] were leasing the land. They can’t even join in the class action because they don’t own the property. The contamination [level of PFAS] in their blood was so high. (Richmond participant)

We were kind of led to believe that businesses would be included, so that if we had wanted to go down that path, we’d be able to. After that, we kind of felt lost again ... We didn’t know if we wanted to [join the class action] anyway, but when we found out that that wasn’t even an option—that was disappointing. (Richmond participant)

The Williamstown class action also influenced property, although not the way plaintiffs hoped. Participants expressed surprise at how little a difference the settlement of the class action seemed to make to their property and situation:

We’ve come out after all of it close to what we think we should have gotten just by selling the property, let alone all of the rest of the crap we have gone through. (Williamstown participant)

It’s not enough money to pick up and move and buy another property. Where do you buy another property that’s so close to the cities and so close to the beach? (Williamstown participant)

Although it may be the case that the class actions did not alleviate property concerns, they also did not dictate what must happen with the contamination. Technological difficulties associated with remediating PFAS have meant the chemicals will likely stay in the environment indefinitely:

It will be difficult to put an absolute time on it [the remediation]. We have been very clear, both ourselves and Defence in terms of the timing of this. This is going to be a long-term issue. (Steve Beaman, EPA Executive Director of Regulatory Operations in Kelly, 2021)

Thus, although property shaped the toxic torts, the outcome of the torts themselves did little to alleviate plaintiffs’ concerns about their properties or the environment.

6.3 | The state

Plaintiffs and defendants represented the state—consisting of Defence and other Australian Government bodies—in varying ways to progress their claims. The Australian Government emphasised just how much financial input was being put into managing the various PFAS sites across Australia:

Australian Government investment and action to respond to PFAS contamination over the last three years has been extensive. Over \$30 million has been invested into research, both to better understand whether there are any long-term health effects of PFAS exposure, and to develop clean-up technologies to remove PFAS from the environment. Efforts to support significantly affected communities, through dedicated mental health and counselling services, voluntary blood testing, and provision of clean water, total investments of more than \$120 million. (Joint Standing Committee on Foreign Affairs, Defence and Trade, 2019)

Meanwhile, several of the Williamstown and Richmond plaintiffs viewed the government's expenditure as too little when compared with the amounts they had spent on funding the litigation:

I feel like the people who are paying tax to look after the people of Australia, to make sure we're safe, their money is not only making us contaminated but is also fighting people like us who are contaminated ... It's such a simple thing to say sorry, instead of using taxpayers' money to fight against us. I just don't understand this world where they ... they've got plenty of money, why can't they just compensate? (Richmond participant)

I really don't understand why the government gave Defence so much money to fight us in court and then settled. They've known about this stuff for so many years, why weren't they buying up the properties as they came up for sale? (Williamstown participant)

Whether these plaintiff and defendant representations of the state influenced the outcome of the torts is difficult to unravel. Defence's liability as the polluter (which Justice Lee noted was not a straightforward question) was not determined in the Williamstown class action, as the case settled before a decision was made. If the Richmond class action continues past this point,

a finding of liability may well be made by the judge, and it will be possible to unravel how these representations of the state influenced the eventual outcome. Such a finding would have ramifications for further PFAS class actions in Australia, as one participant noted:

I suppose another difficulty with Williamstown was that because it was one of the earliest sites and one of the most high-profile sites, there was concern that whatever happened in Williamstown would set a precedent and I suppose that was also borne out with the finding of the class action. (State Government Official)

The litigations did have repercussions for the state's approach to managing PFAS. Several participants reported that the litigation meant that Defence, as manager of the contaminated sites, played a more subdued role after the litigation began, and even after it ended:

The litigation gave the Commonwealth a great reason to say we can't talk to you anymore ... Instead, the individual agencies had to deliver the news when and where it happens ... The last couple of years, there's really been not much happening, or at least it's not a public issue. Once the litigation finished, there probably hasn't been any more public meetings and we don't really understand anymore what Defence is up to. (Williamstown participant)

Plaintiffs and defendants represented the state in ways that would seemingly benefit their claims in the class action, while the presence of the proceedings altered the state's approach to managing the contamination.

7 | DISCUSSION

In finding that plaintiff and defendant representations of space (the body, property and state) influenced the manifestation of the legal action, our study aligns with other legal geography research on litigation (Atkins et al., 2006). Our approach also continues the legal geography trend of observing that litigation also shaped these spaces in return.

We add to research on toxic torts by examining the plaintiff body as a site that was represented variously by both plaintiff and defendant. For instance, it was apparent that the defendants attempted to render the connection between plaintiffs' bodies and exposure to the contaminant as scientifically uncertain to diminish their responsibility, aligning with Atkins et al. (2006) reporting on defendants' spatio-legal actions. Plaintiffs also drew attention to their bodies, positing that the

presence of the contamination had caused illness. In examining these claims, the courts made visible the effects of the contamination on residents' bodies. Residents affected by contamination, particularly their sick bodies, are often ignored by the law or deliberately rendered out of sight (Davies, 2019). Research on hidden legal geographies has proposed that the law reinforces certain social and legal orders, and mental ill-health, informal knowledge and disadvantage are typically outside of such orders (Jeffrey, 2021; Prior et al., 2013). Legal proceedings related to exposure to contamination are particularly vulnerable to issues of visibility as they typically involve both disadvantaged communities and informal knowledge, as the contamination itself is largely invisible and difficult to detect (Davies, 2019). In the Williamstown and Richmond class actions, the opt-out structure has enabled disadvantaged communities to press their claims for justice and for their informal knowledge to be heard. Opt-out approaches have previously been proposed to promote access to justice by ensuring those often unable to bring legal action now can (Legg, 2011). As Justice Lee indicated in the Williamstown class action, without the class action, "the claims of these group members would not have been litigated in an adversarial way but, rather, they would likely have been placed in the position of being supplicants requesting compensation, in circumstances where they would have been the subject of a significant inequality of arms" (*Smith v Commonwealth of Australia [No 2]* (2020)). So, the effects of the contamination on plaintiffs' bodies were rendered visible, which is not necessarily a common occurrence.

However, plaintiffs felt frustrated that, although the effects on their bodies were discussed and examined in the court proceedings, they could more readily seek justice for damages to their property than their bodies. Although the option remains for litigants to press personal injury claims should the health effects of the PFAS become more demonstrable, the reluctance to do so, so far, perhaps confirms the high bar required to prove a connection between health effects and exposure in the courts, as noted by other Australian legal scholars (Dellavedova, 2021; Golru, 2022). That the bar may be lower for claims relating to financial and property damages is demonstrated by the Williamstown and Richmond class actions, where "there was no pleading of any claim made by group members of any personal injury" (*Smith v Commonwealth of Australia [No 2]* (2020)), being financed by commercial litigation funders, who deemed the cases had a chance of succeeding. It remains to be seen whether any of the toxic tort class actions emerging from the PFAS contamination in Australia will press personal injury claims.

The means for distributing the settlement emerging from the Williamstown class action is also worth considering. The majority of the settlement

funds were to address depreciating property values and the inconvenience, distress and vexation felt by residents, and the method for distributing the funds depended on plaintiffs' land zoning and home ownership status. Given that PFAS have been used since the 1970s at Williamstown and its presence was just as likely to affect homeowners as renters throughout this period, it seems unlikely that the level of inconvenience, distress and vexation felt by a plaintiff would be able to be distinguished by their tenure type. Findings elsewhere have observed that renters may even experience greater concern or worry about living near contamination than homeowners (McIntyre et al., 2018). It was also a decision by the litigants' lawyers in the Richmond class action to limit plaintiffs to land owners, leaving renters and businesses out of their class action, which several participants deemed unjust. The decision for doing so probably rests, again, with the fact that the claims in both class actions related to financial and property damages, rather than personal injury. Ultimately, owning property rendered a resident more likely to become a plaintiff or to obtain a larger compensation fund. Extant legal geography scholarship asserts that the law tends to privilege certain property relationships (Blomley, 2014; Gillespie, 2016), a finding that is reinforced here, along with the notion that it is difficult to press claims relating to physical health and exposure.

Considering residents' assertions that the class action settlement had done little to change their circumstances, their property and the local environment, and that Defence was not actively seeking to implement remediation measures, it is likely some of these insufficiencies could be explained by the high persistence of PFAS and current technology's inability to remediate the chemicals (Wanninayake, 2021). Nonetheless, the settlement at Williamstown does not make a ruling on how the contamination should be remediated or even how to prevent residents from being exposed in the future, which is not unusual. As broader research on environmental litigation has observed, "damages awarded as a result of the pollution of a river are not necessarily applied to reinstate the river to its former unpolluted state" (Preston, 2008, citing Stone [1972], p. 8).

Finally, the two class actions have consequences for the state worth considering. Although the litigation likely delayed Defence's management of the contamination, as was noted by several participants, it also had the effect of making the plaintiffs cynical of the Australian government. Many felt that their tax contributed to Defence's legal fees in the court case or even that the Commonwealth Government was endorsing the case by allowing Defence to use taxpayers' money in the litigation. Plaintiffs feeling betrayed by the state may have exacerbated the situation further, as feeling

hopeless and abandoned has been found in other research to correlate with worse mental health for residents of contaminated sites (Schmitt et al., 2021). Given the dissatisfaction some plaintiffs felt with the outcome of the Williamtown class action, it is also possible that there could be further ramifications for how class actions are conducted in Australia. As a result of *Smith v Commonwealth of Australia (No 2)* (2020), the Australian Government conducted an inquiry into litigation funders and the distribution of settlement funds to plaintiffs. The inquiry recommended limiting funders' settlement fees, although there are fears that this may discourage class action funding in the first place (Hughes, 2020). Whether such legal action becomes discouraged across Australia remains to be seen, although it is clear that this series of class actions have and will continue to have a range of consequences for the state.

8 | CONCLUSION

We have revealed that examining the body, property and state in toxic torts through a legal geography perspective has much to add to studies of environmental contamination and hazards more broadly. We have observed that one of the toxic tort class actions resulted in a large number of those affected by the contamination being compensated, but still, several issues emerged during the process. Most notably, despite claims pressed in class actions concerning largely economic, financial or property-related damages—and not personal injury or illness—the bodies of plaintiffs still played a significant role in the court cases. Participants were frustrated that the proceedings could not allow them to receive compensation for any physical illness they felt they had received from the contamination nor that any judgement could be made about whether the chemicals had affected their health. It was also the case that the method of determining settlement distribution for inconvenience, distress and vexation seemed to focus primarily on residents' property status, a method which may underestimate the extent to which the experience of living near contamination harms renters. Finally, there were also significant ramifications of the Australian Government being the polluter, regulator and defendant. Residents felt betrayed by the state for harming them in the first place, and the extensive and costly effort the Australian Government then underwent to seemingly deny this harm caused considerable anguish and distress and perhaps permanently changed how these residents viewed the government and state. Toxic tort class actions such as those in the Williamtown and Richmond proceedings make visible the ways the law treats bodies, properties and the state and reveals how injustices or inequalities may result.

There are ramifications from these insights for legal geography studies. First, the legal geography approach to analysing the toxic torts allowed for an unravelling of how the law treats people and places, how people and places are affected by the law and how the law is influenced in return. By extending beyond traditional legal examinations of torts, litigants' perspectives and stories are drawn attention to. Second, this study continues recent legal geographic investigations of environmental regulation and litigation, such as those conducted in this journal, contributing to the formation of consistent approaches that pay attention to the co-constitution of law and place (Bartel et al., 2013). The focus on how different forms of evidence, as has been emphasised by Jeffrey's (2019, 2020, 2021) reports on the sub-discipline, could continue to represent a fruitful approach to studies of other environmental law matters, such as compensation for natural disasters.

Finally, there are several limitations to this study. The class action at Richmond has yet to settle, so the difference between the class actions cannot be completely drawn out. The focus on individual case studies means that the findings cannot be generalised further, especially considering the law often functions differently in other countries. However, given that toxic torts relating to PFAS are likely to grow in number over the next few years, the findings of this paper could continue to have direct relevance for these cases, especially in Australia. Future research could continue this investigation of toxic torts to PFAS contamination at other sites worldwide and other emerging contaminants of concern.

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CONFLICT OF INTEREST

There is no potential conflict of interest.

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DATA AVAILABILITY STATEMENT

There are no data available.

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