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O'Brien, Tom orcid.org/0000-0002-5031-736X (2021) 'We stand in the Luddite legacy': Tracking Patterns of Anti-GM Crop-Trashing in the United Kingdom. *Journal of Cultural Geography*. pp. 313-335. ISSN 1940-6320

<https://doi.org/10.1080/08873631.2021.1928828>

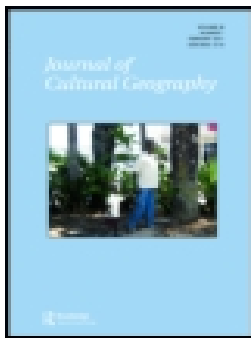
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“We stand in the Luddite legacy”: tracking patterns of anti-GM protest and crop-trashing in the United Kingdom

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To cite this article: Thomas O’Brien (2021): “We stand in the Luddite legacy”: tracking patterns of anti-GM protest and crop-trashing in the United Kingdom, *Journal of Cultural Geography*, DOI: [10.1080/08873631.2021.1928828](https://doi.org/10.1080/08873631.2021.1928828)

To link to this article: <https://doi.org/10.1080/08873631.2021.1928828>



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“We stand in the Luddite legacy”:¹ tracking patterns of anti-GM protest and crop-trashing in the United Kingdom

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ABSTRACT

Concern over the uncertainty associated with genetically modified (GM) products in the late 1990s in the UK led to an extensive anti-GM campaign. Activists adopted a broad array of tactics from conventional protest marches and rallies through to more unconventional and confrontational actions. An important part of the protest repertoire was the physical damage and destruction of GM crops. These were intensified following the decision of the government to license a series of field scale evaluations (FSE) of GM crops intended to determine their potential impact on biodiversity. The aim of the article is to determine why crop trashing events played an important role in opposition to GM in the UK by considering the geographical spread and recognition of such actions. The paper draws on a protest event catalogue of anti-GM protests over the 1996–2016 period to identify their intensity, tactics, and locations. The findings suggest that crop-trashing was primarily adopted in response to the availability of targets. However, it also points to the rural setting as a space in which different norms and histories provide a justification for destructive acts in the face of uncertainty.

KEYWORDS Crop-trashing; protest; event analysis; genetic modification

Introduction

Early on the morning of 26 July 1999, a group of 30 Greenpeace activists used bolt cutters to access a six-acre GM field trial site at Walnut Tree Farm, near Lyng in Norfolk. Among them was the Labour peer Lord Peter Melchett, who had written to the farmer, William Brigham, asking to meet and discuss removing the crop, noting that 73 per cent of the public opposed GM, but had not received a response. On entering the field, a tractor-towed mower cut the maize, while others trampled and bagged the crop

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before loading it onto a truck. The activists were wearing white decontamination overalls with the Greenpeace logo on the back (Jones 2000). The event ended when the police arrived and arrested those involved. In the court case the following year, a jury was unable to agree a verdict on the charge of criminal damage and the defendants were released (McCarthy 2000). The confrontational and destructive character of these events, coupled with the theatricality of decontaminating the field, were designed to generate media attention and publicise the perceived threat posed by GM crops. This event was part of a wider campaign against the introduction of GM crops and food in the UK, involving in public demonstrations and marches (Doherty and Hayes 2012), alongside the use of institutional and legal channels (Doherty and Hayes 2014; Reynolds 2013). These actions demonstrated concern among groups within society about the uncertainty associated with GM technologies.

In the case of GM crops, there is a tension linked to the fact that while they are rooted to a particular place, the potential benefits are more dispersed. Affolderbach (2011, 186) captured the complexity of natural resource management, arguing that it brings “controlling vested interests and community, environmental and social interests” into conflict, demonstrating its contested and unsettled character. As a result, supporters and opponents of GM had to craft narratives that appealed to stakeholders at the local level, as well as those at higher levels. The desire of the UK government to develop and commercialise GM crops in the late 1990s and early 2000s illustrates this contest. Attempting to strengthen their position, the anti-GM movement attempted to move beyond environmental movement actors to involve communities potentially impacted by the introduction of GM crops. The commercialised nature of GM crop development added a further opportunity for opponents. Actions taken against field trials targeted private actors to disrupt and dissuade, while the broader movement attempted to appeal more to the government and general public, focusing on influencing decisions around the regulation and public perception of GM products. To fully understand the significance of the anti-GM movement, it is necessary to examine the locations and character of the movement during the campaign. Examining the geographical spread and form of events associated with the anti-GM movement can help unpack their interaction and co-existence.

This article considers the pattern of anti-GM protest in the UK over the 1996–2016 period. The focus is on answering the question, why were crop-trashing events a significant part of the anti-GM campaign in the UK? The article draws on a unique event catalogue of anti-GM protests to consider the form of the movement over the 1996–2016 period. The first section outlines the key developments in the attempted introduction of GM in the UK. The emergence of opposition to GM in the UK is then considered in the second section, examining the actors and tactics adopted. The method used to identify and catalogue anti-GM protests is outlined in the third

section. The fourth section draws on the protest event catalogue to unpack the different forms and settings of anti-GM contention over the 1996-2016 period. The fifth section draws on the findings from the protest event data to address considerations around adoption and acceptability of crop-trashing.

GM in the UK

This section outlines the development of GM technologies in the UK, considering government attempts to regulate and support their development and the nature of opposition they faced in doing so. Wagner Weick and Walchli (2002, 268) identify two forms of GM in relation to food and crops:

genetic change in agronomic traits important to farmers: for instance ... inserting a gene that makes a crop resistant to the application of a herbicide ... [or] genetic changes in properties of the food product itself: for instance a tomato's nutritional quality of shelf life.

The introduction of new technologies with the potential to reshape the way in which food is produced, where there is a degree of uncertainty over the longer-term implications, can open space for contention over what is socially acceptable. Addressing the options facing governments in this situation, Cocklin, Dibden, and Gibbs (2008, 162) identified:

two alternative pathways ... to facilitate research in, and the development of, GMOs, reaping the claimed benefit of high yield, disease resistant crops ... [or] acknowledge the widespread consumer resistance, take a precautionary approach to the risks, and promote a "clean and green" food and fibre system.

The potential benefits of the new technology meant that in reality, states attempted to balance the two pathways to find a middle ground.

Opposition to GM food and crops emerged in the UK in the mid-1990s, as public awareness began to grow. Levidow (1999, 51) argues that in the UK "a turning point came in 1997, when US exports of GM soya became a pervasive ingredient in most processed foods, initially unlabelled ... [provoking] a widespread risk debate about GM crops". As a result, the initial perception of GM in the UK was coloured by this apparent deception and the lack of regulation monitoring the introduction of new and uncertain technologies into the food system. In response to this concern, the government took steps such as launching a consultation about GM crops that resulted in a code of practice for GM planting by farmers (Toke 2001). However, the dramatic and high-profile nature of the revelations meant that there was a shift in the character of the discussion, as the issue became "part of an ongoing process of political contestation between public and expert systems" (Wales and Mythen 2002, 127). This reaction is captured by Herrick's (2005, 287) claim that there is a "disjuncture between ... what science

deems to be an acceptable level of risk may not match the social perception of acceptability". The ability of the government to draw on technical expertise to justify the potential benefits, was therefore challenged by other voices.

Faced with growing public concern over GM technologies, the UK government sought a path towards commercialisation that would minimise the potential environmental impacts. In evidence given to Parliament's Select Committee on Environmental Audit, English Nature (2003) noted that by 1999, "public concern was reaching fever pitch". Attempting to manage these concerns, the Department of Environment, Transport and Regions (DETR) held discussions with civil society groups and statutory bodies such as English Nature, as well as separately with industry. Summarising the outcome, DETR (2002) noted "Calls for a moratorium ... were rejected but instead the Government introduced a programme of closely monitored commercial-scale plantings of GM crops to assess the impact on wildlife". The resulting Farm Scale Evaluation (FSE) programme resulted in 258 FSE sites being planted in England between 2000 and 2002 (DEFRA 2003²). Figure 1 shows the regional distribution of the FSE sites in England and other trial sites in Scotland and Wales over the 1999-2002 period. The FSEs were intended as "an investigation into the effects of contrasting crop management regimes in farmland biodiversity, rather than a study of the effects of genetic modification" (Firbank et al. 2003, 13). The results were mixed, with English Nature (2003) noting both positive and negative impacts on biodiversity, depending on the crop. Addressing the FSEs, Paul Anderson (2004b, 158) argues the decision "arose from political and ideological choices which were made to appear merely technical", thereby questioning the rationale for the trials. A point highlighted earlier by Toke (2001, 119) when he argued it was "unlikely that all of the GM crops will be refused a licence".

Following the conclusion of the FSE trials, the UK government undertook *GM Nation?*, a six-week consultation exercise in the summer of 2003. The consultation process involved a series of open public meetings, a dedicated interactive website, and a series of closed meetings with representative individuals to determine attitudes towards GM (Pidgeon et al. 2005). The aim was to involve the public and stakeholders in consideration of the commercial viability of four varieties of herbicide resistant crops (Reynolds 2013). Reflecting on the effectiveness of *GM Nation?*, Taylor-Gooby (2006, 85) argues it was hampered by the fact that it was taking place "in the context of public mistrust of GM food, a lack of demand for it, and lack of confidence in the research that was being made available". The result was a decline in attempts to commercialise GM crops with further development taking place predominantly within research institutes, largely out of view of the public (Doherty and Hayes 2012). Although the issue surfaced periodically, as in 2012 with activists targeting GM wheat

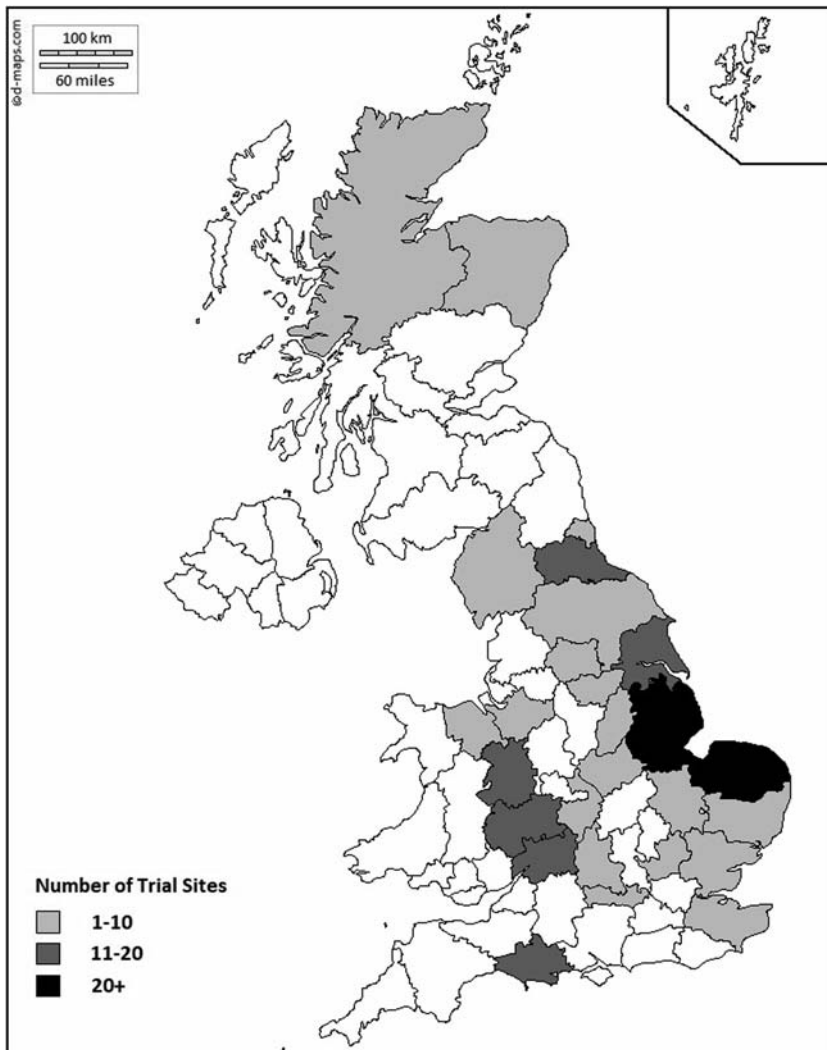


Figure 1. UK GM Field Trials by County (1999-2002). Source: DEFRA <https://webarchive.nationalarchives.gov.uk/20030731085229/http://www.defra.gov.uk:80/environment/fse/location/index.htm> [Accessed 7 February 2020] Map - d-maps.com https://d-maps.com/carte.php?num_car=17745&lang=en

at Rothamsted Research in Hertfordshire, the scientists involved attempted to de-escalate the threat through dialogue (Mahony and Pallett 2013). Rather than addressing public concerns, there was a perception that supporters of GM crops were attempting to frame it as a technical, apolitical issue, while the underlying process remained unchanged (Anderson 2004b). While the government failed to persuade the public of the

benefits of GM, it is necessary to consider how opponents mobilised to shape opinions and disrupt development.

Opposition to GM in the UK

The movement against GM in the UK began in the late 1990s. This coincided with growing public awareness and concern over GM foods, with labels such as “Frankenstein foods” taking hold in the media and public imagination (Augoustinos, Crabb, and Shepherd 2010). Plows (2008, 103) argues that the early actions undertaken by the anti-GM movement “were able to mobilise public awareness over issues of environmental health risk and uncertainty”. The issue of uncertainty was particularly sensitive in the UK following the BSE scandal, which had raised questions about the food safety implications of industrialized farming’ (Sassatelli and Scott 2001, 223). During this period, actions by groups such as Greenpeace targeted supermarkets, focusing on the distribution and labelling GM-based products (Levidow and Carr 2000). The significance of this tactic is emphasised by Zilberman et al. (2013, 87) when they argue that “retailers and large food manufacturers are the weak link in the supply chain and most vulnerable to pressure”. The anti-GM movement was therefore able to establish a foundation from which to present its claims by raising public awareness. In the face of the government’s eagerness to exploit the potential presented by GM technologies, the impact of public campaigns was limited.

The campaign against GM can be seen as an attempt to foreground the government’s highly political decision to proceed in the face of continued uncertainty. The movement against GM included established organisations like Greenpeace and Friends of the Earth (FoE), as well as smaller, localised, self-organised groups. Faced with the government policy of “managed development” of GM, there was a move towards a more radical type of opposition. In contrast to the more moderate approach of large environmental organisations, Taylor (2008, 27) argues that “radical environmentalism ... is [animated by the idea] that the earth and all life is sacred and worthy of passionate defense”. This followed a shift in the broader environmental movement in the early 1990s, from a “well-organized and well-supported but politically moderate” stance towards high-profile, confrontational campaigns (Doherty 1999, 275). Capturing this change, Rootes (2009, 213) has argued that new groups such as:

Earth First! ... were essentially banners under which a younger generation of activists to whom FoE and Greenpeace appeared bureaucratic and timid, might take direct action proportionate to what they perceived to be the urgency of environmental issues

The anti-roads movement that started in Twyford Down in 1992 was illustrative in this regard (see Rootes 2013), as it established direct action as a tool to challenge state actions (Anderson 2004a). The potential costs of such “unacceptable” forms of protest may be higher, as the state may attempt to restrict such behaviour by imposing more restrictive forms of social control and punishment (Jackson, Gilmore, and Monk 2019).

Drawing on the potential offered by direct action tactics, the anti-GM movement sought to challenge the government position directly. The introduction of FSEs offered a clear target for direct action, representing a visible symbol of the potential threat posed by GM. Although FSEs were not the only site of protest and contention, their number and wide geographical spread (see Figure 1) meant that they were available to a range of different environmental movement actors, in the way a centralised target would not have been. It also suited “the very loose forms of organisation” in the environmental movement, since actions were able to be relatively independent and self-directed (Doherty and Hayes 2012, 555). Addressing the success of the movement, King (2016, 434) argued this reflected:

the unity and practical working relationship that was established between several groups: activists who pulled up GM crops, the large mainstream NGOs who represented the respectable face of the movement, and the radical scientists who supported it

An important feature of actions targeting trial sites were the alliances that formed between activists and local groups, moving beyond the perception that protesters were from elsewhere and not representing local concerns. Plows (2008, 103; see also Seifert 2020) illustrates this point by identifying “a ‘crop squat’ in Norfolk on a GM field site [that] was supported by local farmers”. By bringing individuals together, the protests presented opportunities for the formation of collective identities around a shared concern (see Seifert 2013).

Engaging in destructive forms of direct action presented a challenge for those involved, since the potential costs could be considerable. In line with the core motivation for direct action, acts of crop trashing intended to disrupt the continuation of field trials, by making them unviable (Plows, Wall, and Doherty 2004). Examining the character of these events, Doherty and Hayes (2012) note that the majority were conducted covertly. This reflects the core intention being to cause damage, with the act itself being sufficient to send a message about the unacceptability of the practice. However, Doherty and Hayes (2014, 12) note in later work that this tactic was not uncontested, as “there was a heated argument between those who favoured covert nocturnal sabotage and those committed to what they called ‘accountable actions’ involving symbolic amounts of destruction”. The willingness of participants to consider overt tactics can be linked to

the “explicitly non-threatening, playful ethos” (Doherty and Hayes 2012, 543) of those involved, as well as the fact that “direct action is only one among other, conventional movement activities” (Seifert 2020, 16). The remainder of this paper examines patterns of anti-GM protest, highlighting the scale and extent of crop-trashing events, but also considering the range of other contentious actions that took place over the period.

Methodology

The research in this paper draws on an original dataset of protest events targeting genetic modification in the United Kingdom between 1996 and 2016 drawn from a range of national and regional newspapers (see Appendix).³ Tracking protest events in this manner allows for the identification and examination of patterns of behaviour over a defined period of time (Koopmans and Rucht 2002). There are limitations to relying on newspapers for source material, since editorial decisions and commercial imperatives mean that not all events are covered. However, as Earl et al. (2004) argued, the use of newspaper stories provides a useful snapshot of events that occur over a period of time. Newspapers are also useful in the subject of this study as they reflect the interests of wider society and can reflect attitudes towards the object of interest, protest actions targeting GM crops. The catalogue cannot exhaustively capture all protest events that targeted GM, as it relies on incidents reported in the media. The data collected aim to develop a broad picture of how these events were presented to the public.

The search strategy drew on electronic archives of national and regional newspapers in the United Kingdom between January 1996 and December 2016 to identify protest events. Strawn (2010) has shown that searching electronic archives is a practical way of identifying protest events. While noting the benefits of this approach, (Strawn 2010, 71) also notes that “the development of valid, reliable, and efficient electronic search procedures” requires testing and refinement. The Appendix lists the newspapers included in the search, their circulation and the year when each of the regional newspapers included became available. The regional newspapers consulted were all those with a 2011 circulation of greater than 35,000 that were available from Factiva with a start date of 2002 or earlier. A search of these newspapers was run for all stories containing the terms “protest*” and “genetic*” and either of “modifi*” or “engineer*”. The search returned 1916 stories, with 131 distinct protest events (with some events being covered by more than one source) being identified after a manual scan of each headline and summary.⁴ Details of each event were recorded in database capturing information on location, actors involved, specific actions (up to four per event) and a brief description. The catalogue was analysed to draw out patterns

in the protest events, focusing on the absolute number and variation in the range of settings and action types. The findings of this analysis are reported in the next section.

Anti-GM protest events (1996-2016)

The scale of opposition to GM in the UK varied over the period covered, reflecting changes in the external environment and public awareness. [Figure 2](#) shows the number of protest events targeting GM over the 1996-2016 period, distinguishing between events involving crop trashing (50) and more conventional and less destructive actions (81). Looking at the trend over time, it is clear that the period leading up to and immediately after the government consultation and field scale evaluations (1999-2003) saw the most intense activity. The use of crop-trashing as a tactic during this period was linked to the availability of targets, as the location of the FSEs was available to activists. Alongside direct action, environmental movement activists also engaged less confrontational forms of action, following a similar pattern of contention. Following the *GM Nation?* consultation exercise and the end of the FSE results, the number of protests dropped, as restrictions on planting led to a loss of interest in commercialisation and a general decline in visibility of GM technologies (see [Lean 2004](#)).

Considering the geographical spread of anti-GM protests around the UK can give a sense of the character of the campaign. As noted above in [Figure 1](#), the FSEs were distributed around England, with additional trial sites in Scotland and Wales, making it worthwhile considering whether these regional

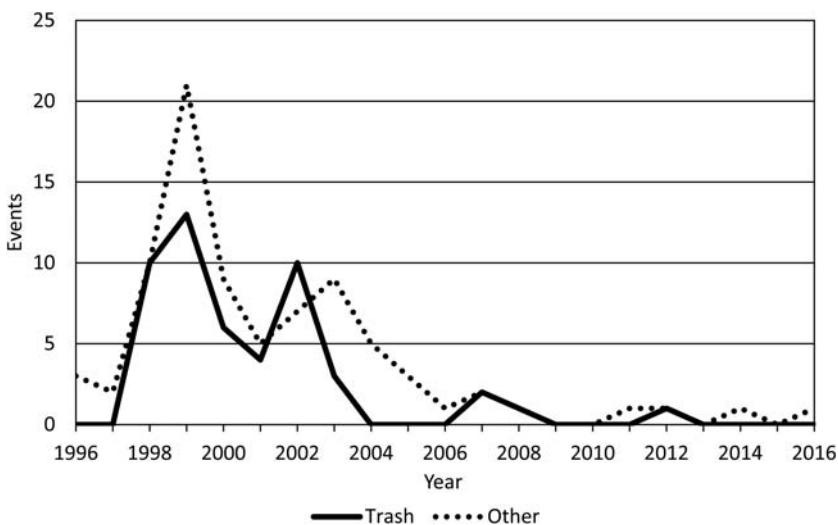


Figure 2. UK Anti-GM Protest Events (1996-2016).

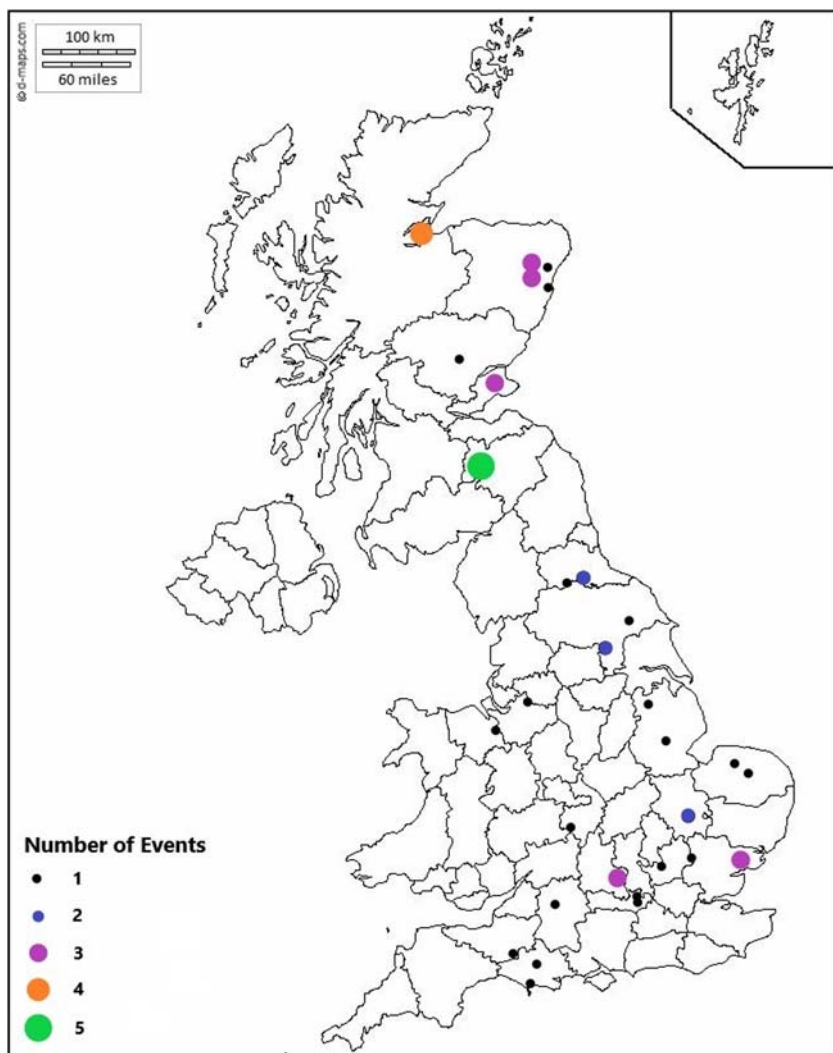


Figure 3a. Location of Crop Trashing Events (1996-2016). Map - d-maps.com https://dmaps.com/carte.php?num_car=17745&lang=en

variations shaped the pattern of protest sites. Figure 3a and b show the location of trashing events (50) and other types of anti-GM protest (81) across the UK. Scotland featured features prominently as a location of crop trashing events, with sites near Aberdeen and Edinburgh being targeted repeatedly, possibly pointing to the availability of these sites. In contrast, trashing events in England were more dispersed, with trial sites mostly being targeted once or twice. Despite the high number of trial sites in Lincolnshire (45) and Norfolk (42) these counties only saw two trashing

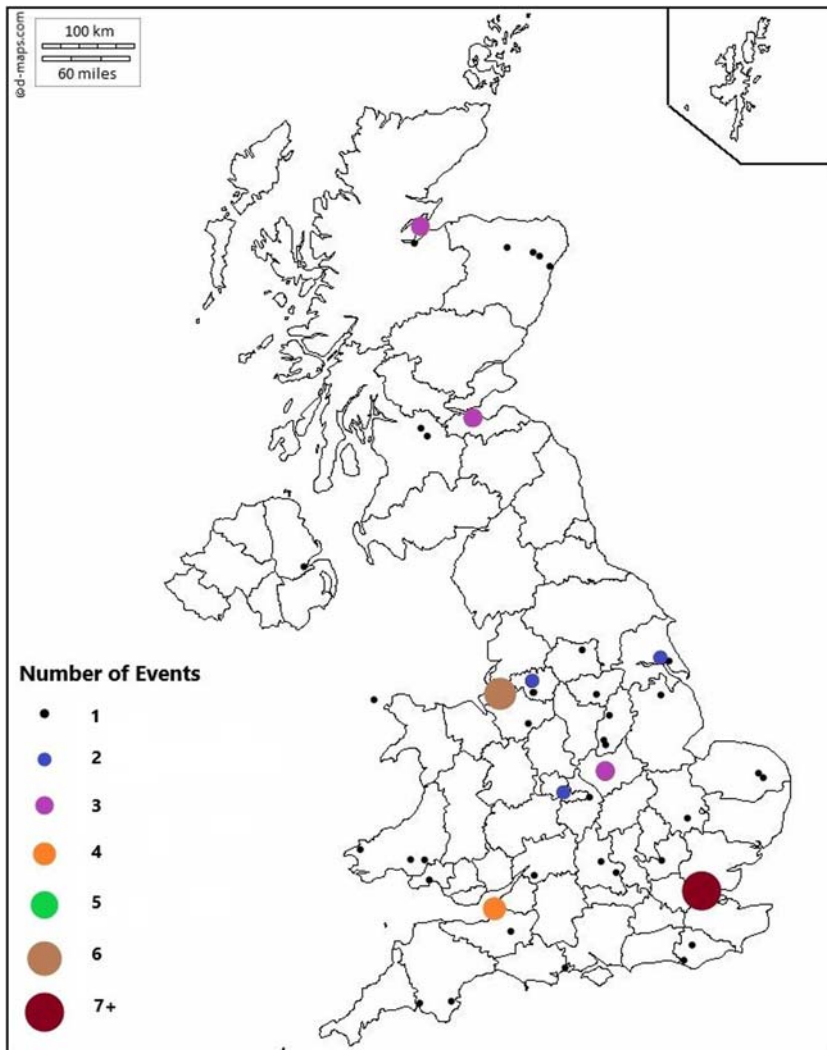


Figure 3b. Location of Anti-GM Protest Events (1996-2016). Map - d-maps.com https://d-maps.com/carte.php?num_car=17745&lang=en

events each. This may be due to the availability of trial sites and their public notification during the FSE exercise, providing a high number of readily accessible sites, enabling a more dispersed form of action. The other events (Figure 3b) were also spread broadly, with clusters in major centres such as London (19), Liverpool (6) and Bristol (4).

A wide range of settings were targeted in the protest actions recorded, alongside trial sites. Regions with higher numbers of FSEs saw similarly higher numbers of protests at trial sites, which is expected given the

number of targets. By contrast, the South East which had lower numbers of FSEs, saw a relatively high number of actions targeting trial sites, possibly linked to the proximity to London. Actions at these field sites involved participants trashing GM crops, but they also saw non-trashing actions like occupations and in one case planting organic potatoes. In spite of the state's role in regulating GM, the number of events targeting official buildings was relatively low, with workplaces and other urban settings featuring more significantly. Events in these settings arguably focused on raising awareness around the perceived threat posed by GM and challenging official narratives. Supermarkets made up half of the events at workplaces, as protesters engaged in actions like handing out leaflets, wearing costumes, and putting labels on GM products. Alongside this, protesters also engaged in direct action, locking on to gates and trucks to restrict access to trial sites and other locations associated with the handling of GM products. Actions targeting official buildings sought to establish responsibility directly, targeting symbolic locations such as Downing Street, where a truck dumped four tonnes of GM soya beans. They also gathered at court buildings during trials of activists and when other opportunities to raise publicity arose, such as when Friends of the Earth protested in Caistor, Lincolnshire when Monsanto was fined for breaching GM regulations. Moving across this range of sites enabled the movement to draw on a range of different tactics.

Moving from the setting to the type of action, there is a clear divide between crop-trashing events and other forms of protest. Table 1 suggests that aside from entering restricted areas and damaging crops, trashing events made limited use of demonstrational and appeal actions. This is due to the often-covert nature of such events, which is considered below

Table 1. Frequency of Action Type (1996-2016).

		All	Trash	Other
Appeal	Address	16 ^a (12.2) ^b	2 (4.0)	14 (17.3)
	Present	3 (2.3)	0 (0.0)	3 (3.7)
Demonstrational	Gather	63 (48.1)	3 (6.1)	60 (74.1)
	Display	16 (12.2)	3 (6.1)	13 (16.0)
	March	12 (9.2)	1 (2.0)	11 (13.6)
	Perform	25 (19.1)	3 (6.1)	22 (27.2)
	Costume	13 (9.9)	3 (6.1)	10 (12.3)
	Meet	1 (0.8)	0 (0.0)	1 (1.2)
Confrontational	Obstruct	13 (9.9)	1 (2.0)	12 (14.8)
	Chant	4 (3.1)	0 (0.0)	4 (4.9)
	Occupy	14 (10.7)	1 (2.0)	13 (16.0)
	Enter	66 (50.4)	50 (100.0)	16 (19.8)
	Camp	1 (0.8)	0 (0.0)	1 (1.2)
Violent	Damage	53 (40.5)	50 (100.0)	3 (3.7)
Actions (total)		300	117	183
Events (total)		131	50	81

^aNumber of actions recorded, up to four per event.

^bPercentage of events including particular action.

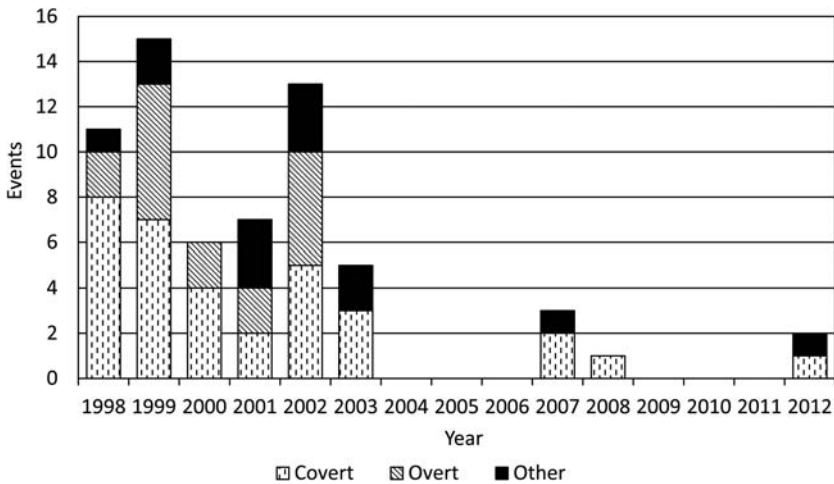


Figure 4. Protest Events at Trial Sites (1998-2012).

(Figure 4). There were exceptions, such as the march from Lymm, Cheshire in July 2002 which saw 30 costumed activists in decontamination suits break down and trample crops (Bottomley 2002). Non-trashing events made use of a broader repertoire of actions, including marches to trial sites, holding large public gatherings with high-profile speakers addressing the crowd, such as “Britain’s largest ever organic picnic” at Greenwich, London in July 1999 (Guardian 1999). When they did enter restricted spaces, the focus was more on actions involving obstructing and occupying workplaces to prevent work such as unloading and processing of GM soya (The Observer 1996) and the planting of crops at trial sites (The Times 2007). Reflecting the distribution of settings noted, protesters adopted actions that were likely to draw attention to the issue like engaging in performances, such as a gathering in June 2005 at the London headquarters of Sainsbury’s supermarket to sing ribald songs (Vidal 2005). The visibility of such actions also provided an opportunity to highlight the breadth of opposition, moving beyond environmental movement activists, as demonstrated by an October 2003 march through London with tractors to present a petition to the Prime Minister’s staff at 10 Downing Street (Brown 2003).

The majority of crop trashing events took place covertly (33 events) and involved actors attempting to enter and carry out destructive acts without notice, with only 17 events taking place overtly. There were also 13 events that took place at trial sites, but did not involve crop-trashing, due to police presence or because the planned event was a more demonstrational action. As Figure 4 shows, most overt acts took place earlier in the period and coincided with peaks in anti-GM protest. This may be connected to the novelty of GM early in the period, as protesters sought to raise awareness

and attempt to build support to prevent the technology being rolled out. This is represented by an event where eleven activists were arrested for targeting a trial plot of sugar beet in Lincolnshire, with a spokesperson stating “There are environmental concerns and we do not know about the long-term effects on health” (Hornsby 1998). By contrast, covert acts featured more regularly across the time period, decreasing over the period as penalties were increased and trial sites became more protected. Covert acts that took place at night and in secret also made more use of symbols to express their claims, such as tearing a giant “X” in a field in Aberdeenshire (Arthur 1998) or painting one of the historic Avebury stones to look like a tomato, an act denounced by Friends of the Earth (Kennedy 1999). They also drew on the opportunities presented by the anonymity covert actions enabled. In May 2012, protesters threatened to storm a genetic wheat trial site if the trial was not halted, but there was a covert break in that damaged the crops a week before the proposed protest (Collins 2012). The opportunity presented by covert actions also carried a potential cost, as the degree of secrecy may make it harder for the wider community to identify with the actions.

Overt actions were more able to identify and articulate claims by aligning with or creating organisations to build a profile and generate wider understanding and support. These types of actions utilised recognised protest forms (as noted in Table 1), like marches, costumes, speeches, and performances, such as “decontamination” of GM crops. An example of this form of event took place in Yeovil, Somerset in July 2000, when 180 protesters gathered, including individuals dressed as the grim reaper. A number of those present invaded the field and damaged a GM maize trial, leading to seven arrests (The Times 2000). Despite the potential personal costs associated with arrest and prosecution, the adoption of overt tactics is important in generating solidarity and demonstrating commitment (Seifert 2013). The performative nature of these actions can be seen as important in generating support and attention, potentially providing context and a frame of reference with which to interpret covert actions, thereby normalising and potentially legitimising them.

An important feature of the protests against GM development in the UK was the ability of the state to prosecute those engaging in illegal actions. There are 303 arrests recorded in the catalogue (223 associated with trashing events), ranging from the arrest of a Greenpeace activist for dumping four tonnes of GM soya beans at Downing Street (Manchester Evening News 1999) through to 43 arrests at a protest near Spital in the Street, Lincolnshire in July 1999 that involved flags and decontamination suits, but mistakenly tore up a non-GM maize crop (Daniels 1999). Despite the number of arrests, many of those taken to court were convicted of lesser offences such as criminal or malicious damage (Doherty and Hayes 2014). In an attempt to deal with

this lack of success, attempts were made by the government to strengthen police powers, to make them similar to charges used against animal rights activists (Grice 2008). Acquittals were used by activists as a way of generating attention and further advancing their claims. A group celebrated the July 2001 acquittal of seven activists who had been arrested in the Yeovil event mentioned above by pulling up crops in Weymouth (Vidal 2001).

The data presented here suggest the strength of feeling around the testing of GM crops. The fall in events after 2002 noted in Figure 2 reflects the state's decision to scale back and move away from the commercial development of GM crops. The figure also demonstrates the importance of trashing events as a proportion of the whole range of anti-GM actions. What the incidence data are unable to capture is why trashing events were such a significant part of the campaign. The next section of the article attempts to address this issue by interpreting the findings within their wider social context.

Considering the adoption of crop-trashing

The combination of direct action and more demonstrational forms of action (Table 1) played an important role in this success of the anti-GM movement. The varied character of GM meant that a broad range of settings were available, enabling actors to target supermarkets to dissuade them from stocking GM products, enter field trial sites to damage or uproot crops, while also drawing on more conventional demonstrations addressed at the government. In this regard, issues of space feature centrally, for, as Sewell (2001, 55) argued “we should be especially attentive to what might be called spatial agency – the ways that spatial constraints are turned to advantage in political and social struggles”. Acting within these particular spaces, protest actions aimed to challenge and question accepted practices, bringing issues of concern to the attention of observers. The contested character of these spaces can be seen in the example of a farmer “who [had] applied to grow GM sugar beet near Tittleshall, Norfolk ... [and] pulled out of the national crop trial, saying he felt it was wrong to force the experiment on the community” following strong local protest (The Scotsman 2000).

Within the broader considerations around space, issues of place were also important in shaping what movement actors could do. Manuel-Navarrete and Redclift (2009, 17) note that place meanings are messy, as they “are collectively shared and contested. They do not necessarily mean the same thing to everybody”. This is apparent in the case of GM field trials, as the government, those running the trials, and their opponents, arguably saw the sites selected as interchangeable, with the crops being the relevant feature. For the local community, the trial sites represented specific places that were connected to the history of the area and meaningful in their own right. This

points to the importance of social movement actors drawing on existing local understandings when engaging in destructive acts, marking specific spaces out as suitable for this message and targeting symbolic places to present the message that GM was not acceptable. The reaction to a trashing event in the town of Totnes, Devon demonstrated the importance of local perspectives when members of the community organised a protest outside the local court in support of two women charged with crop trashing (The Guardian 1998).

Within the anti-GM movement, there were a range of tactics adopted, but as Figure 2 shows, crop-trashing featured as an important tool. While this prominence is clear in the data, the reasons for this are less immediately apparent, requiring consideration of the wider context. When considering possible reasons for the intensity of direct action, the first reason can be drawn to the availability of targets. The number of publicly notified FSEs in England (Figure 1) that the government initiated over the 2000-2002 period created an important opportunity for activists to engage in trashing activities. The setting of the trial site was also important in enabling participants to create routines and behaviours recognisable to observers. In conjunction with crop trashing, other actors engaged other forms of direct action and demonstrational protest, to raise awareness more broadly. Viewed in this way, crop-trashing can simply be seen as an attempt to capitalise on the opportunity presented by the large number of dispersed targets for action. In doing so, the anti-GM movement was able to make the field trials unviable by making them targets for attention and potential action.

The availability of FSEs may suggest why they were a target for anti-GM actions, but this is not sufficient to explain the apparent acceptability of these actions. The events in Totnes noted above point to a deeper concern with preservation, as 1500 people signed a letter in support of the recent trashing event stating they wanted “to remove the threat of genetic contamination” (The Guardian 1998). Looking to the longer history of rural spaces in the UK may provide a reason for this apparent acceptance by the general public, as Endres and Senda-Cook (2011) note, past events and social norms adhere to and give meaning to social practices in particular places. The destruction or damage of plants and trees has a long history in the UK as a form of protest (see Griffin 2008a, 2008b). These actions were relatively common during the eighteenth and nineteenth centuries as a form of resistance to changes in land use practices and access following the enclosure of commons and the loss of traditional rights. This ties directly to the idea of contestation over rural space and its uses.

In the contemporary period, there are references to the longer history of rural resistance, with a veteran activist addressing a crowd in 2012 claiming “We’ve been accused of being Luddites ... Well we are proud to say we stand in the Luddite legacy. They fought to defend their communities” (Whipple 2012). As noted above, there was general wariness and opposition to GM

within the general public, potentially opening the space for action. In doing so, opponents presented arguments that would resonate, such as Greenpeace Executive Director, Lord Melchett's claim that "The whole process [of scaling up trials] has been nothing short of genetic tyranny with an almost complete lack of consultation" (Meikle 2000). The location of FSEs in rural areas also required protesters to find a way of marking such spaces as unique and the trials as potentially threatening to existing practices of local communities. Emerging during an upsurge in environmental contention, the anti-GM movement was able to adopt more transgressive and confrontational approaches.

An important factor regarding the targeting of field trials was the slightly ambiguous status of the trial sites. Their physical locations were clear, as DETR had made this information publicly available. The ambiguity derived from the fact that, since the trials were backed by the government, they had a different status within the rural context. Rather than being owned by the farmer, they were in fact hosted. This meant that even though protesters were entering private land, their target was the state-owned trial crop. This claim was made explicitly by Jim Thomas of Greenpeace at a trashing event in 1999 when he stated "Our disagreement isn't with this farmer or these farm workers, it's with AgEvo for producing this crop and the Government for letting it be planted" (Evening Mail 1999). In making this claim, it could be argued that the opposition to GM crops pointed to deeper concerns around resource management. As Argent (2011, 188) has argued:

rural industries, land uses and communities are now firmly bound up within an expanding and overlapping mesh of networks governing their activities from a variety of scales, from the local through to the global.

The result being that acts against field trials at a local scale could be presented as directed at national (or even global) targets and not at individual farmers.

A final consideration is that the rural settings of the field trials brought in questions concerning the "complex, contested, variable mix of *production*, *consumption* and *protection* goals" (emphasis in original, Holmes 2006, 145). Farms are sites that embody the tensions between these goals, so the question then becomes how GM crops may threaten established practices and rural competitiveness. Addressing this issue, Alex Johnstone, member of the Scottish Parliament, argued "if we allow GM crops to be tested in our environment, our premium will be harder to command in the future" (Gavin 2000). His statement was based on the idea of Scottish agriculture representing something pure, bringing in claims of protection. Uncertainty over the longer-term effects of GM crops on biodiversity, combined with the potential threat posed to other rural practices, such as organic certification (see Gibbs 1998; Meikle 2006), mean that they could be presented as challenging goals of both production and protection.

Conclusion

There was considerable opposition to the introduction of GM products and crops in the UK during the late 1990s and early 2000s. The success of the anti-GM movement is captured by Seifert (2020, 19) when he notes that the campaign in the UK “was fervent but short-lived as it soon ‘consumed’ its targets”. This article has examined the protest events that took place as part of this campaign in more depth, drawing out their geographical spread, setting and intensity over the 1996–2016 period. The core aim was to determine why crop-trashing events played such a prominent role in the campaign, by placing them in context. The campaign targeted a range of products, actors and settings, seeking to raise awareness and restrict the distribution of GM products. Attempts by the government to defuse these tensions through consultation had limited effect, as there was a sense that the decision had been made to continue with development. The government decision to license a number of Field Scale Evaluations (FSE) of GM crops was an important element in this regard, as it demonstrated a commitment to commercialisation. In this context, the aim of the movement was to find a way of forcing a re-evaluation of this trajectory.

Crop-trashing is a high-risk tactic, for both the individual and the movement. Within the broader repertoire, acts of crop-trashing played an important role in advancing the claims of the movement by highlighting the geographical extent of the potential threat posed by GM. The act of entering a private space to damage and remove property carried considerable legal (and sometimes physical) risks. In spite of this, many individuals were willing to do so, receiving support from local communities and farmers. Considerations of space played an important role, particularly in relation to the rural setting of the FSEs. The idea of introducing technologies with uncertain effect into the physical environment challenged ideas associated with the rural space, enabling activists to draw on community feelings to legitimise their actions. In doing so, crop trashing brought attention back to the contested nature of the rural sphere, highlighting interests associated with production, consumption and protection and how these animate the behaviour of different actors. The adoption of crop-trashing as a tactic took advantage of the availability of sites, but also drew on traditions of rural resistance and concerns around the uncertainty associated with GM crops to make ensure acceptance amongst observers.

The campaign against GM in the UK was very specific to its time and place, responding to a distinct series of developments. However, there is scope to take lessons from the case and consider them in examining other situations. Further research could consider the social acceptability of destructive protest to determine whether crop-trashing represented a unique case or whether uncertainty may provide legitimacy for such

actions. The focused and contained character of the GM issue enabled protest actors to signal their intention through their actions, raising questions regarding whether similar tactics could be seen as acceptable in cases where the target is less immediately apparent.

Notes

1. Theo Simpson speaking to a crowd at a foiled crop invasion (Whipple 2012).
2. <https://webarchive.nationalarchives.gov.uk/20080306093123/http://www.defra.gov.uk/environment/gm/fse/location/index.htm> [Accessed 7 February 2020]
3. Full data set and coding guide are available at <https://doi.org/10.15124/22e0da9e-2cf0-4b77-bf23-c93053ffbe86>
4. Stories examined made reference to a larger number of actions, but as these were not covered in detail and often referred to in bulk they have been excluded from consideration.

Acknowledgements

An earlier version of this paper was presented at the 65th Political Studies Association Conference, 30 March – 1 April 2015. The author would like to thank Graeme Hayes for sharing his thoughts on a very early version of this paper. Thanks also to the editor for his patience and careful guidance.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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References

- Affolderbach, J. 2011. "Environmental Bargains: Power Struggles and Decision Making Over British Columbia's and Tasmania's Old-Growth Forests." *Economic Geography* 87 (2): 181–206.
- Anderson, J. 2004a. "Spatial Politics in Practice: The Style and Substance of Environmental Direct Action." *Antipode* 36 (1): 106–125.
- Anderson, P. 2004b. "What Rights are Eclipsed When Risk is Defined by Corporatism? Governance and GM Food." *Theory, Culture and Society* 21 (6): 155–169.
- Argent, N. 2011. "Trouble in Paradise? Governing Australia's Multifunctional Rural Landscapes." *Australian Geographer* 33 (1): 97–114.
- Arthur, C. 1998. "Eco-warriors 'Protest' Risking Super Weeds." *The Independent*, June 18.

- Augoustinos, M., S. Crabb, and R. Shepherd. 2010. "Genetically Modified Food in the News: Media Representations of the GM Debate in the UK." *Public Understanding of Science* 19 (1): 98–114.
- Bottomley, R. 2002. "GM Protest 'Hijacked'." *Manchester Evening News*, July 22.
- Brown, P. 2003. Scientists Uncover Risks in GM oil Seed Rape." *The Guardian*, 14 October.
- Cocklin, C., J. Dibden, and D. Gibbs. 2008. "Competitiveness versus 'Clean and Green'? The Regulation and Governance of GMOs in Australia and the UK." *Geoforum* 39 (1): 161–173.
- Collins, N. 2012. "GM Wheat Vandalised a Week Before Protesters Threatened to Uproot Crop." *The Daily Telegraph*, May 21.
- Daniels, S. 1999. "GM Protesters Tear up Wrong Maize Crop." *The Sunday Times*, August 1.
- DEFRA. 2003. "GM Crop Farm Scale Evaluations: Locations of Sites." Accessed February 7, 2020. <https://webarchive.nationalarchives.gov.uk/20080306093123/http://www.defra.gov.uk/environment/gm/fse/location/index.htm>.
- DETR. 2002. *The History of the Farm-Scale Evaluations*. Accessed February 21, 2020. <https://webarchive.nationalarchives.gov.uk/20080306093105/http://www.defra.gov.uk/environment/gm/fse/background/history.htm>.
- Doherty, B. 1999. "Paving the Way: The Rise of Direct Action Against Road-Building and the Changing Character of British Environmentalism." *Political Studies* 47 (2): 275–291.
- Doherty, B., and G. Hayes. 2012. "Tactics, Traditions and Opportunities: British and French Crop-Trashing Actions in Comparative Perspective." *European Journal of Political Research* 51 (4): 540–562.
- Doherty, B., and G. Hayes. 2014. "Having Your Day in Court: Judicial Opportunity and Tactical Choice in Anti-GMO Campaigns in France and the United Kingdom." *Comparative Political Studies* 47 (1): 3–29.
- Earl, J., A. Martin, J. McCarthy, and S. Soule. 2004. "The use of Newspaper Data in the Study of Collective Action." *Annual Review of Sociology* 30: 65–80.
- Endres, D., and S. Senda-Cook. 2011. "Location Matters: The Rhetoric of Place in Protest." *Quarterly Journal of Speech* 97 (3): 257–282.
- English Nature. 2003. "The Farm Scale Evaluations of GMHT Crops in Britain: Development, Results and Implications for Biodiversity in the UK." *Select Committee on Environmental Audit Committee*. Accessed February 25, 2020. <https://publications.parliament.uk/pa/cm200304/cmselect/cmenvaud/90/3120303.htm>.
- Evening Mail. 1999. "Greenpeace Chief Comes a Cropper." 27 July.
- Firbank, L., M. Heard, I. Woiwod, C. Hawes, A. Haughton, G. Champion, R. Scott, et al. 2003. "An introduction to the Farm-Scale Evaluations of genetically modified herbicide-tolerant crops." *Journal of Applied Ecology* 40 (1): 2–16.
- Gavin, J. 2000. "Community Protests against GM Oilseed Rape Trial." *The Scotsman*, April 22.
- Gibbs, G. 1998. "Devon Crop Destroyed by Gene Activists." *The Guardian*, August 5.
- Grice, A. 2008. "Government to Defy Critics with Secret GM Crop Trials." *The Independent*, November 17.
- Griffin, C. 2008a. "'Cut Down by Some Cowardly Miscreants': Plant Maiming, or the Malicious Cutting of Flora, as an Act of Protest in Eighteenth- and Nineteenth-Century Rural England." *Rural History* 19 (1): 29–54.

- Griffin, C. 2008b. "Protest Practice and (Tree) Cultures of Conflict: Understanding the Spaces of 'Tree Maiming' in Eighteenth- and Early Nineteenth-Century England." *Transactions of the Institute of British Geographers* 33 (1): 91–108.
- The Guardian. 1998. "Seeds of Anger." August 26.
- The Guardian. 1999. "GM Crops Protest: Hundreds put their Food where their Mouths Are." July 26.
- Herrick, C. 2005. "'Cultures of GM': Discourses of Risk and Labelling of GMOs in the UK and EU." *Area* 37 (3): 286–294.
- Holmes, J. 2006. "Impulses Towards a Multifunctional Transition in Rural Australia: gaps in the Research Agenda." *Journal of Rural Studies* 22 (2): 142–160.
- Hornsby, M. 1998. "Protesters Arrested at Genetic Crop Site." *The Times*, August 17.
- Jackson, W., J. Gilmore, and H. Monk. 2019. "Policing Unacceptable Protest in England and Wales: A Case Study of the Policing of Anti-Fracking Protests." *Critical Social Policy* 39 (1): 23–43.
- Jones, T. 2000. "GM Raid Peer made Appeal to Farmer." *The Times*, April 4.
- Kennedy, M. 1999. "Avebury Stones Daubed in GM Protest." *The Guardian*, June 19.
- King, D. 2016. "From Radical Science to Luddism: A Post-BSSRS Activist Perspective on the Politics of Technology." *Science as Culture* 25 (3): 432–446.
- Koopmans, R., and D. Rucht. 2002. "Protest Event Analysis." In *Methods of Social Movement Research*, edited by B. Klandermans, and S. Staggenborg, 231–259. Minneapolis, MN: University of Minnesota Press.
- Lean, G. 2004. "GM Firms Finally give up on Planting in Britain." *The Independent*, November 21.
- Levidow, L. 1999. "Britain's Biotechnology Controversy: Elusive Science, Contested Expertise." *New Genetics and Society* 18 (1): 47–64.
- Levidow, L., and S. Carr. 2000. "UK: Precautionary Commercialization?" *Journal of Risk Research* 3 (3): 261–270.
- Luft, O. 2011. "ABC: i debuts with Daily Circulation of 133, 472 in January." *Press Gazette*, February 11.
- Mahony, M., and H. Pallett. 2013. "Boundaries, Territory and Public Controversy: The GM Debate Re-Materialised." *Area* 45 (2): 249–251.
- Manchester Evening News. 1999. "Four Tons of GM Soya Dumped in Downing Street." February 18.
- Manuel-Navarrete, D., and M. Redclift. 2009. "The Role of Place in the Margins of Space." *Environment, Politics and Development Working Paper Series*. London: Department of Geography, King's College London.
- McCarthy, M. 2000. "GM Crops Trial – Unlikely Radical Continues Family Tradition of 'Doing the Right Thing'." *The Independent*, September 21.
- Meikle, J. 2000. "Unveiled – the GM Crop Trial Farms." *The Guardian*, March 18.
- Meikle, J. 2006. "Ministers Pave Way for GM Crops as 'Zero Cross-Pollination' Ruled Out." *The Guardian*, July 21.
- The Observer. 1996. "Roving Brief – Campaigners Bailed." December 1.
- Pidgeon, N., W. Poortinga, G. Rowe, T. Horlick Jones, J. Walls, and T. O'Riordan. 2005. "Using Surveys in Public Participation Processes for Risk Decision Making: The Case of the 2003 British GM Nation? Public Debate." *Risk Analysis* 25 (2): 467–479.
- Plows, A. 2008. "Towards an Analysis of the 'Success' of UK Green Protests." *British Politics* 3 (1): 92–109.

- Plows, A., D. Wall, and B. Doherty. 2004. "Covert Repertoires: Ecotage in the UK." *Social Movement Studies* 3 (2): 199–219.
- Pugh, A. 2011. "Regional ABCS: Circulation Falls on 83 of 86 Dailies." *Press Gazette*, August 31.
- Reynolds, L. 2013. "The Contested Publics of the UK GM Controversy: A Tale of Entanglement and Purification." *Science as Culture* 22 (4): 452–475.
- Rootes, C. 2009. "Environmental NGOs and the Environmental Movement in England." In *NGOs in contemporary Britain*, edited by N. Crowson, M. Hilton, and J. McKay, 201–221. Basingstoke: Palgrave Macmillan.
- Rootes, C. 2013. "From Local Conflict to National Issue: When and How Environmental Campaigns Succeed in Transcending the Local." *Environmental Politics* 22 (1): 95–114.
- Sassatelli, R., and A. Scott. 2001. "Novel Food, New Markets and Trust Regimes: Responses to the Erosion of Consumers' Confidence in Austria, Italy and the UK." *European Societies* 3 (2): 213–244.
- The Scotsman. 2000. "GM Crop Trial Abandoned after Protests." April 12.
- Seifert, F. 2013. "Transnational Diffusion of a High-Cost Protest Method. Open Field Destructions in France, Germany and Spain." *Interface* 5 (2): 213–239.
- Seifert, F. 2020. "National Specificity and Convergence in the European anti-GM Movement: The Cases of Austria, Germany, France, Spain and the UK." *Innovation: The European Journal of Social Science Research*. DOI: 10.1080/13511610.2020.1766950.
- Sewell, W. 2001. "Space in Contentious Politics." In *Silence and Voice in the Study of Contentious Politics*, edited by R. Aminzade, J. Goldstone, D. McAdam, E. Perry, W. Sewell, S. Tarrow, and C. Tilly, 51–88. Cambridge: Cambridge University Press.
- Strawn, K. 2010. "Protest Records, Data Validity, and the Mexican Media: development and Assessment of a Keyword Search Protocol." *Social Movement Studies* 9 (1): 69–84.
- Taylor-Gooby, P. 2006. "Social Divisions of Trust: Scepticism and Democracy in the GM Nation? Debate." *Journal of Risk Research* 9 (1): 75–95.
- Taylor, B. 2008. "The Tributaries of Radical Environmentalism." *Journal for the Study of Radicalism* 2 (1): 27–61.
- The Times. 2000. "GM Protesters Arrested." July 17.
- The Times. 2007. "Media Monitor." May 1.
- Toke, D. 2001. "GM Crops: Science, Policy and Environmentalists." *Environmental Politics* 10 (4): 115–120.
- Vidal, J. 2001. "Magistrates Acquit GM crop Protesters." *The Guardian*, June 13.
- Vidal, J. 2005. "Eco Sounding." *The Guardian*, June 22.
- Wagner Weick, C., and S. Walchli. 2002. "Genetically Engineered Crops and Foods: Back to the Basics of Technology Diffusion." *Technology in Society* 24 (3): 265–283.
- Wales, C., and G. Mythen. 2002. "Risky Discourses: The Politics of GM Foods." *Environmental Politics* 11 (2): 121–144.
- Whipple, T. 2012. "GM Crop Protest Foiled by Police." *The Times*, May 28.
- Zilberman, D., S. Kaplan, E. Kim, G. Hochman, and G. Graff. 2013. "Continents Divided." *GM Crops & Food* 4 (3): 202–208.

Appendix

Table A1. Newspaper, circulation and availability.

Newspaper	Circulation (2011)*	Start Year [§]
The Daily Telegraph	651,184	
The Times	457,250	
The Guardian	279,308	
The Independent	185,035	
The Sunday Times	1,039,371	
The Sunday Telegraph	527,742	
The Observer	314,164	
Regional:		
Manchester Evening News	90,973	2002
Liverpool Echo	85,463	2001
Evening Chronicle (Newcastle)	52,486	2002
Evening Times (Glasgow)	52,400	2000
Leicester Mercury	51,150	1997
The Sentinel (Staffordshire)	50,792	1998
Evening Express (Aberdeen)	47,849	1998
Birmingham Mail	47,217	1999
Hull Daily Mail	43,523	1998
Edinburgh Evening News	39,947	1998
Yorkshire Post	39,698	1981
Bristol Evening Post	38,344	2002
The Star (Sheffield)	37,255	2001
Nottingham Evening Post	35,361	1997

*For national circulation see Luft (2011) and for regional Pugh (2011).

[§]This is the first year in which stories were available from each source in the Factiva database.