

The *Torrey Canyon* Disaster, Everyday Life, and the ‘Greening’ of Britain

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Abstract: This article challenges the predominant narrative of the rise of modern environmentalism that supports much of the historiography on environmental ideas and movements. Through a study of the effects of the *Torrey Canyon* disaster of 1967, we show that everyday life is a vital mediator of environmental catastrophes, and has played a crucial role in rendering ambiguous popular attitudes towards the impact of disasters on the natural world. Using oral interview evidence, neglected by much environmental history, we trace the connections between the experience of the disaster and the contradictory ways in which this experience was or, more commonly, was not translated into environmentalist sensibility. We study the ways in which everyday concerns about economic insecurity created antagonistic understandings of the disaster that both magnified its unfortunate impact and complicated its subsequent meaning. We argue that attitudes towards the spill and its effects on nature were often contradictory. On the one hand there was a powerful association with the suffering of wildlife affected by the spill. Yet simultaneously many of those interviewed rejected explicit environmental activism, or drew only weak lines of connection between green ideas and their own experience of environmental disaster. We suggest that everyday environmental discourse should be seen as more geographically specific, ambiguous, and self-aware than that which is traditionally associated with the conservation movement, and that oral history can be a vital tool in developing a more sophisticated understanding of the complex social nature of modern environmentalism.

Introduction

At about nine o'clock on the morning of Saturday March 18, 1967 the *Torrey Canyon*, a 118,000 ton crude oil carrier, was steaming east of the Scilly Isles off the Southwest coast of Britain.¹ The vessel was significantly off a course that would have taken her through safe passage west of the Isles, heading directly for the notorious Seven Stones reef. One of a new breed of "jumboized" super-tankers taking crude oil from the Persian Gulf to refineries in Western Europe, she was the technical embodiment of the post-war transformation of global oil distribution.² A series of attempts to warn the *Torrey Canyon*'s crew of the impending catastrophe were to no avail. Sometime after a quarter-past nine the ship went hard aground atop Pollard Rock, tearing open several of her tanks in the process. In the weeks that followed the grounding, the uncertain fate of the ship slowly turned to disaster. For several days, salvage was attempted. However, poor weather hampered these operations, further ensuring settling of the ship on the rocks. The following Tuesday, an attempt to tow the vessel off the rocks ended with an explosion that fatally injured the chief salvor. By Easter Sunday, on March 26, the weather had deteriorated. Battered by wind and waves, the *Torrey Canyon* finally began to break apart, releasing a further 30,000 tons of crude oil into surrounding waters. That evening the British government launched an attempt to destroy the remaining oil on board through aerial bombardment.³

With the salvage operation concluding in spectacular televisual failure, attention turned to the oil now coming ashore on Cornwall's world-famous holiday resort beaches. Over the next fortnight an enormous clean-up operation took place, involving hundreds of military personnel, volunteer firemen, local fishermen, municipal workers and volunteers. The seas and beaches around Cornwall were sprayed extensively with toxic detergents designed to emulsify and disperse the crude oil. A month after the grounding it was possible for government to plausibly claim the crisis over and "Operation Mop-Up" a success. Yet in

the interim many thousands of oiled birds and poisoned marine creatures had perished and Cornwall's marine ecology suffered significant damage as a result of the detergent.

Cornwall's holiday resort status was saved, but at an enormous cost to the natural environment.

When asked to what degree these events had influenced her own thinking about the environment, Marion Caldwell offered the following reflection:

[Marion Caldwell] I think it probably did. We didn't hear much about that side of things at all, as we do now. I don't think we knew about air, well there wasn't so much air pollution in Cornwall anyway. The ecological side of things. No, it was not discussed really. The farming, you know, that was a great part of our lives I suppose, but when it came to seeing the fish, that did hit people. You know we eat fish [laughter], we don't eat birds as a rule, and it's often when it touches people's lives directly that you begin to think more about these things. People were very sad to see the birds suffer, and so many of them! It wasn't just seagulls it was the cormorants, the shags, whatever, all sorts of different birds were affected. That was horrid, they are a beautiful part of our lives and that was horrid, to see them like that. I was talking about the rock pools, we used to have such fun in those as children, and to see them sort of empty and oily, and it made a difference. Whether people started thinking more, then, about what destruction things like that can cause in our lives, I don't know. Maybe it had a good outcome in that it made people think about these disasters.⁴

Caldwell's answer reveals uncertainty. What was the ultimate impact of this disaster on environmental consciousness? Maybe people did start to think about the destruction of the environment? She emphasizes her uncertainty with phrases such as "probably" and "I don't

know.” Her honest uncertainty suggests no easy route from the experience of environmental disaster to a sense of changing communal consciousness.

In recent years, social and environmental historians have argued that we should pay greater attention to the social context of popular thinking about the environment.⁵ Marco Armiero and Lise Fernanda Sedrez, for instance, have argued that popular environmentalisms are driven as much by social and economic context as by ecological ideas.⁶ The study of subaltern environmentalism has led to significant progress in our understanding of environmental consciousness among non-elite groups. However, it has tended to focus on clearly politicized responses to environmental concerns.⁷ The resonance of an infamous example, such as Love Canal, a classic case for the study of social and environmental concerns, is precisely the connection between a pollution incident and the development of a politically effective environmental consciousness.⁸ It is a case where, in contrast to Caldwell’s experience, we do know about the effects of disaster. However, the risk of emphasizing such cases is that they produce a narrative that exaggerates the impact of disasters on the development of formal environmental organization. More broadly, they contribute to a story of the greening of this or that polity, which fails to account for those similar incidents and processes where no straightforward greening takes place.⁹

As Stefania Barca has argued, it is not clear that a straightforward narrative of the rise of modern environmentalism is viable in many subaltern contexts.¹⁰ Our own research raises questions about how the experience of environmental disaster is mediated in complex and unpredictable ways through everyday life. What, for example, do we make of Marion Caldwell’s acknowledgement of ambiguity regarding the consequences of an environmental incident? What should we make of catastrophic environmental experiences that *do not* lead to the emergence of a clearly defined political response? These are the questions that motivate this article. In asking them we want to think about environmentalism in a non-linear, non-

narrative way. Rather than thinking about a ‘making of environmentalism’, or a ‘greening of Britain’, we assume that in everyday life there is always a negotiation with nature going on; that in some way we are all always already environmentalists. Yet that this everyday environmentalism does not necessarily translate into either a self-aware consciousness of the environment, or political organization. In short, along with Fabien Locher and Jean-Baptiste Fressoz, we would argue that the real problem of environmental consciousness is not explaining its rise, but rather its relative political marginality.¹¹

This exploration of everyday environmental consciousness and its limits has been undertaken through oral history, an approach that, with notable exceptions, is still underutilized in environmental histories, but that is well suited to the interrogation of the everyday experience and the traces it leaves in memory.¹² Our public call, through local newspapers and radio stations, for those who remembered this event generated more than 100 replies, and interviews with fifty men and women were recorded during the summer of 2012. The composition of the final interview cohort was designed to reflect both the geographic spread of the oil contamination and the impact upon different sectors of the Cornish economy, and therefore includes men and women from a wide range of occupations, such as fishermen, hoteliers, lifeguards, policemen, truck drivers and housewives. The majority were born between the mid-1930s and the late 1940s: most were in their twenties or early thirties at the time of the disaster, while others were in their late teens, and two were children. The interviewees, therefore, came from a wide range of Cornish villages and towns, both on the coast and inland. In addition, the memories of personnel from the army, navy, and fire service—many of whom were brought in from outside the county for the duration of the emergency—were also recorded.

Our semi-structured oral history interviews followed an open-ended format in three parts: autobiographical information and life narrative, specific memories of the events and

impact of the *Torrey Canyon*, and finally reflection upon the meaning of the oil spill in the longer term.¹³ This interview structure enabled the authors to address different dimensions of the remembering process. First of all, the life story contextualized personal memories of the disaster, allowing the interviewers to understand both the role of class and occupation, and the narrative frameworks, within which accounts of the disaster were situated. The specific memories of this disaster are analysed fully elsewhere, following a predominantly “reading with the grain” approach to elucidate how the oil spill and clean-up operation were experienced, remembered, and given meaning by those living in the affected communities. In the concluding part of the oral history interviews participants were asked about the short and long-term social, economic, or environmental impacts of this disaster, their knowledge of oil spills elsewhere in the world, and any other matters they wished to discuss. It is from this section of the interview that the earlier excerpt from Marian Caldwell is drawn, and the interviewees' reflections enhanced the opportunity to unpack the complexity of everyday environmental consciousness. What follows integrates oral history narratives with the evidence of contemporary newspapers, local and national archives, and reads these “against the grain” to explain some of the tensions that Caldwell identified in the relationship of the *Torrey Canyon* disaster to environmental consciousness. In doing so, we throw new light on the complex and difficult relationship between environmentalism as a political and ideological discourse and everyday life in modern Britain.

The Contradictions of Disaster

The character of everyday life in post-war Cornwall was critical to the making of the *Torrey Canyon* spill into an environmental disaster. As Ewen has shown, large-scale technological failures are produced by complex social, technological and political interactions.¹⁴ It is not apparent, for example, that the response to the spill needed to take on the character of a

national emergency. In the case of the *Exxon Valdez*, for instance, the US government's response was delayed by weeks. In the case of the *Torrey Canyon* the spill was immediately recognized as an existential threat to the Cornish peninsula demanding a large-scale, state-level response. Ironically, much of the disaster caused by the *Torrey Canyon* was a result of this response; particularly the excessive use of toxic detergents to disperse the oil in response to advice by government scientists. As was widely recognized at the time of the grounding, the known toxicity of emulsifiers meant that, in purely ecological terms, the best response would have been allow time and tide to breakdown the oil through mechanical and biological action.¹⁵ When oil from *Torrey Canyon* hit French shores, the authorities used solid materials such as sawdust and chalk to sink the oil, which was then collected and disposed of elsewhere. Detergents were not used extensively as they were considered too much of a risk to the local shellfish industry.¹⁶ In Cornwall the response was a large-scale, militarized, technological solution to what was called "the battle of the beaches." A response later recognized as having been excessive and poorly executed.¹⁷ Detergents turned crude oil into an emulsion, which, as D.S. Ranwell reported, could be more toxic than crude oil itself.¹⁸ "Manual removal of oil and normal tidal action," he claimed, "cleans beaches at least as effectively as chemical methods and does not add to pollution."¹⁹ Numerous interviewees recalled that the detergents caused more harm than the oil.²⁰

So how did the response to the spill come to be couched in the terms of a national emergency? Previous accounts have emphasized the role of political authority as an explanation.²¹ But this fails to explain the particular form, or intensity, of response to a disaster in a seemingly peripheral area of the United Kingdom. The character of everyday life and social reproduction in Cornwall's maritime communities provides a fuller understanding of what was at stake, and how the effects of the clean-up operation became so ecologically disastrous.

During the twentieth century tourism had become increasingly important to the Cornish economy, reaching a peak number of visitors per year in the 1960s.²² The commodification of Cornwall's landscape was apparent in the production of particular Cornish communities as environments with unique characteristics. Since the nineteenth-century, coastal towns like Newlyn and St Ives had added a role as artists' colonies to traditional industrial activities such as fishing.²³ Bernard Deacon has shown that these cultural transformations had as much to do with what was considered to be a tasteful or desirable representation of the Cornish "margin" as by economic processes.²⁴ Nonetheless, it signalled the emergence of a commoditized Cornish landscape as a kind of domesticated wilderness.²⁵ From the 1930s, prompted by the efforts of rail companies to promote the county as a destination, tourism expanded as a vital local industry. Railway companies projected through advertising an image of Cornwall as a place of wide seascapes, golden beaches and accessible nature, the "Cornish Riviera."²⁶ By the 1960s, fishing was of increasingly marginal economic, if not cultural, importance. In the wake of the disaster, the *Economist* characterized the local fishing industry as "miniscule," producing just 100,000 cwt of a total British catch of 61 million tons, and employing just 1000 people in full and part-time work.²⁷

Tourism and the production of an idealized, commoditized Cornish landscape was an increasingly central part of social and economic reproduction in mid-twentieth-century Cornwall, but this new political ecology was riven with social and cultural tensions. Antony Farrell placed the events of the *Torrey Canyon* spill in the context of emerging class divisions. He recalled his childhood, in the 1950s and 1960s, as the period in which an antagonism between "Downlong" and "Uplong" St Ives matured into a class and cultural division between the long-term Cornish inhabitants of the town, many of whom were moving to new council estates, and an increasingly powerful group of immigrant holiday-home owners, hoteliers, etc.²⁸ Farrell's father and grandfather were both fishermen in the district,

though it was increasingly difficult to sustain an income this way and his father also had a permanent job with the railway. Farrell's mother worked for hotels and restaurants in the area, servicing the growing tourist industry. Clearly, there was a complex relationship here between antagonism towards the tourist industry and simultaneous economic reliance upon it.

Consequently, there was more at stake than the effect of oil on a maritime environment. An entire political economy was threatened with catastrophe.²⁹ For hoteliers and traders alike, the oil that began washing ashore from March 23 was an immediate threat to the landscape of tourism on which their business depended.³⁰ Those running businesses in the tourist sector formed a powerful interest group, who, through local newspapers, actively sought to influence representation of the oil spill as an incident threatening Cornwall's economic future. Resort towns like St Ives were terrorized by the fear of losing business because of the pollution of beaches such as Porthmeor. Colin Kenney, whose parents ran the Mullion Hotel, recalled the "overwhelming fear" that struck those in the catering and hotel trades in the wake of the stranding, and fear of potential bankruptcy should the tourist season fail.³¹ The main part of the summer tourism started in May and June with a peak during the six weeks of the school holidays. It was, therefore, a priority to have the beaches cleared of oil by that time.³²

The economic viability of the main tourist beaches was the prime concern of this social group and the resort to extensive use of detergent was reinforced by the power of their voice in local media and through local political representatives, despite concerns expressed by local fishermen about the possible effect of detergent on their catch.³³ As the oil came ashore at coves and beaches across west and north Cornwall, the *West Briton* reported the Royal Navy being encouraged to "spray on regardless," using up to 80,000 gallons of detergent a day.

Regional newspapers repeatedly emphasized the key arena of activity as a “battle” for the beaches.³⁴ Farrell interpreted the priorities of “Operation Mop-up” as economic and political: “I certainly think quite quickly many of us realised that the clean-up wasn’t in effect about cleaning up an ecological disaster, it was just about the cosmetics of getting the town ready for the summer season.”³⁵ Brian Sheen put it even more succinctly, “Cornwall had to protect its holiday industry.”³⁶ The local tourist industry worked hard through their influence on local news and political representatives to encourage government action to “save the beaches,” and, subsequently, to close down discussion of the incident, or its long-term effects.. Cornwall County Council and its Chairman, Alderman K.G. Foster, issued a series of press releases designed to convince the press, and reassure holiday-makers, that the effects of the spill would be minimal.³⁷ The dominant narrative in the Cornish newspapers of April and May 1967 reflected these efforts to manage the news and emphasized the impact of *Torrey Canyon* in economic terms, while simultaneously minimizing the likely impact of the disaster. This was a delicate balancing act reflecting the centrality of tourism to towns such as St Ives. The *St Ives Times and Echo*, for instance, simultaneously pointed to and played-down fears of the impact on trade. “Cancellations of holiday bookings,” it wrote, “have increased during the last fortnight, but the number has not yet reached serious proportions. More serious is the fact that the number of new bookings has been less than the average for the time of year.”³⁸ Cornwall County Council went so far as to issue a handbill for tourists with the headline ‘Oil Pollution...Your Holiday...THE FACTS’ in an effort to counter the perceived negative publicity of ‘an unprecedented amount of interest in the National Press, Radio and Television’ and to reassure tourists that the ‘tremendous effort’ made by local and national government would ensure ‘your holiday will not be affected in any way’.³⁹

Many small owners of guest houses and hotels no doubt rightly feared for their future. Tourism is an insecure and periodic industry. The needs of everyday survival were paramount

in encouraging many to support and participate in the needless and excessive destruction of their own natural environment. While the economic impact of the spill was potentially disastrous to those dependent upon tourism, in the short-term it produced a significant economic boon for some. In the absence of a well-developed government plan for a clean-up of a large-scale spill, the administrative response relied heavily on the *ad hoc* chartering of local labor and resources.⁴⁰ Significant payments, partly from local funds in the first instance, were made to the owners of fishing vessels to participate in the spraying of detergent. Fishermen and other workers enjoyed a brief period of relatively generous overtime pay during the clean-up operation, which supplemented insecure seasonal incomes. Consequently, the clean-up itself became a significant economic event in the lives of its participants that prompted conflicted responses. As Farrell remembered:

Now everyone considered this to be a disaster but actually there was a very real feeling of, well, local boats may be involved in the spraying of the detergent and make some money on it. And that time of the year, early spring, was generally, in the sixties, before the summer fisheries really got going. So if there was money to be made out of spraying detergent, it was considered to be a bit of a bonus, in terms of the boatmen in the harbour. It wasn't just the fishermen either; it was obvious the pleasure boat owners thought there might be something in it. And I think what surprised many people at the time was the actual sums of money involved. It was, my memory is, that the smaller boats were getting £90 a day, which back in the sixties was a considerable sum of money...⁴¹

This double-sided character to the spill—a disaster with a silver-lining is rarely commented on, but it was repeated by numerous interviewees—plays a critical role in understanding the contradictions of subsequent environmental responses, and their rootedness in everyday experiences of economic insecurity.

Overtime payments to local council workers were one unexpected boon, the “golden oil” helping parents to support their newly married children.⁴² Richard Angove, a lorry driver during the incident, was involved in transporting detergent from Falmouth Docks to various Cornwall Council depots around the coast. He recalled having “an extra shilling in my pocket” and working an extra Saturday on “time and a half.”⁴³ For Angove the grounding was a contradictory event: “That’s the two halves of the scenario, all these people working on the clean-up; I can earn twice as much I’m earning a living. I think that’s a scenario of all disasters. Someone somewhere makes money.”⁴⁴ Angove’s comment gets to the heart of the contradictions of environmental disasters in everyday life. The oil spill was a disaster for hotel owners, but for many local workers and some fishermen it offered a short-term source of financial reward. Far from being a straightforward disaster, Angove demonstrates that the impact of the *Torrey Canyon* was powerfully mediated by socio-economic circumstances and class divisions.

For working-class people it was a familiar case of making the best of the worst. As Farrell recalled: “I only worked for about a week, because by the end of the first week the smaller boats were laid off. It was a bit of a gold mine for a while, but like many gold mines the gold strike didn’t last very long and they brought big boats down and when the big boats came down the smaller boats, like the one I was aboard was laid off really. But it was a cloud with a silver lining, because certainly for a short while it brought a lot of money to some of the small boat owners and certainly the pleasure boat owners.”⁴⁵ Some local fishermen made an extra income by taking journalists out to see the *Torrey Canyon* and the clean-up operation.⁴⁶ Divisions even emerged over ownership of the money-spinning pollution. Farrell recalled his own boat’s owner discovering a Penzance based vessel spraying “our oil.” He “was quite protective about the oil,” he recalled, suggesting an irritation with a rival town’s

boat being allowed an easy job in the bay and the concern that the brief financial bonanza was being exploited by outsiders.⁴⁷

The political economy of oil pollution reveals a great deal about the antagonisms of everyday life that structured both local perceptions of the disaster and the government's subsequent response. It suggests that the *Torrey Canyon* was never seen as the straightforwardly environmental disaster it has become in many subsequent narrative histories of environmentalism. The oil presented a threat to the tourist trade and impelled the adoption of an emergency response. On the other hand, local fishermen and other workers, who had good reasons for concern regarding the use of detergents, became involved in a chaotic, and ultimately destructive, clean-up operation that promised a rarely seen financial windfall. The making of the *Torrey Canyon* disaster thus reflected the deep economic insecurities that pervaded everyday life in the community more widely. Both the status and consequences of environmental disaster were deeply mediated by the necessities of everyday life.

Memories of Nature

In the social and economic context outlined above, it is perhaps unsurprising that attitudes towards the disaster's impact on nature and wildlife were contradictory and inconsistent. The official photographic record of the Cornwall County Fire Brigade, which provided a great deal of the manpower used in cleaning the beached, contained no pictures recording the damage to bird or marine life.⁴⁸ Yet, there was clearly concern about the effects of detergent and oil on the marine environment. As one correspondent in the *Cornish Guardian* put it: "To those, however, who believe that oil which is no longer visible, on the sea or on the beaches, is no longer there, I would ask them to consider the possibilities of where it has gone to. The answer must be in the sea which despite the layman's view of its

all-embracing vastness, is highly sensitive to pollutants which affect the chain of life just as they do in a river.”⁴⁹ A meeting arranged by the Nature Conservancy in Plymouth in the early days after the grounding conveyed the concerns of organisations such as the Cornwall Naturalists Trust and the Cornwall Bird Watching and Preservation Society regarding the use of toxic detergents.⁵⁰ Similar worries from local fishermen were expressed to the Ministry of Housing and Local Government.⁵¹ The ministry responded that it had to “make decisions on the use of detergents balancing the interests concerned, namely fisheries and the holiday industry.” The interests of naturalists or the environment were not a priority. Claims for consideration of compensation due to detergent damage were rejected, along with any argument that there had been errors in the application of detergents, or that there was evidence of the harmfulness of detergent to marine life beyond the intertidal zone where the effects were obvious.⁵² Although privately, and in subsequent reports, failings were acknowledged, local authorities continued to vigorously defend their use of detergents, and their privileging of the holiday industry over other concerns. In June 1967, the borough engineer of St Ives pointed to the effects of the oil on French beaches and argued that “[I]f St Ives had not done so [i.e. used detergents] its beaches would now be deserted.”⁵³ Tourism trumped fishing.

Retrospectively, there may have been more willingness to recognize that the use of detergents had been excessive and harmful. One report concluded, “detergents were often applied by methods that were largely ineffective, uneconomic and wasteful of effort. This was particularly true of the methods used in dealing with the oil stranded on the shore.”⁵⁴ However, this did not change the catastrophic environmental impact of the clean-up operation, which is reflected in memories that emphasize the chaotic and darkly-humorous side to events. Colin Kenney, sixteen at the time, recalled the detergent causing: “A lot of chaos really in terms of killing plant life, it wasn’t good really at dealing with the oil and in

terms of toxicity of the stuff, the actual smell we were getting was a lot worse than the smell of the oil, so everybody had sore throats and was feeling a bit, you know, their eyes were watering. I mean the immediate area where they had these barrels and were decanting them was, all the foliage on the ground, grass, turned black so you could see the power in the stuff.”⁵⁵ Stuart Charles, a local beach lifeguard, recalled: “Nobody understood the power of the detergent, it was all done with good intent, but it was even worse than the oil itself.” The use of the detergent was, he thought, driven by a need “to be seen doing something.”⁵⁶ Kerrier District Council employee, Derek Richards was redirected to work on the spill and recalled the army being brought in to spray beaches: “... after a few days they got fed up with spraying, and all they did was put holes in the drums and just tipped it out, just tipped it out, and the same thing happened in Porthleven.”⁵⁷

Philip Wrixon, a National Trust worker, recalled that it took years for the coastline to recover from the effects of excessive detergent use: “I could see it, we used to go round to a lot of beaches and coastal places to do work and have time to wander off and you could see the oil had been there and been cleaned and there wasn’t much life back there again.”⁵⁸ Philip Ferguson, a child of eight at the time, recalled the immediate transformation of the coastal fauna: “... a different type of seaweed appeared, which wasn’t there before. I think, whether the detergent washed everything away, the fastest acting seaweed would colonise anything. It had never been seen before. I’ll always remember it was like a purpley black type of seaweed which just covered everything afterwards.”⁵⁹ Vivian Stratton, a local naturalist, recalled it taking five years for local coastal marine life to return to something like normal.⁶⁰

How was any sense subsequently made of the damaging effects of the detergents? One way was through identifying the competing interests involved. Brian Sheen, a chemical engineer who was working in the China Clay industry, thought that enthusiasm for the use of petrochemical detergents outweighed possible use of alternative substances such as chalk to

sink the oil, which would not profit the oil companies.⁶¹ Derek Richards recalled that the use of detergents as “useless” suggesting that “someone along the line made a lot of money.”⁶² Nor was this any kind of fantasy. Unilever, one of the companies that supplied large amounts of detergent for the clean-up operation, later produced a short documentary advertisement to promote the effectiveness of its product, presumably in the hope of encouraging governments to stockpile it against future contingencies.⁶³ Local archival sources also reveal the attempts made by sales-people of various companies to encourage Cornwall County Council to stockpile their own brand of detergent.⁶⁴

Another response highlighted the antagonism between lay knowledge and the power of experts in determining the response to disaster, an antagonism that mirrors that found by Brian Wynne in the case of dispute over nuclear power.⁶⁵ It was scientific advice that first framed the nature of the technical response, but this knowledge largely came from outsider sources drafted in to advise on the clean-up. For some, failure to engage with and listen to local experience during “Operation Mop Up” exacerbated the problems the detergent caused. Eric Kemp, second officer on the Trinity House vessel *Stella*, at the time of the accident remembered fishermen realising straight away that the detergent being used was too strong, but also noted that there was a tendency among officials to “never listen to the locals.”⁶⁶ A sense of social and geographical marginality therefore framed memories of why the clean-up operation had apparently gone so badly awry.

Perhaps the most powerful memories of the *Torrey Canyon* referred to its terrible impact on seabirds. The disaster struck at the height of the migratory season for many auks, whose route of travel took them directly past west Cornwall. In his autobiographical account of his childhood in Cornwall, Michael Darracott recalled what was perhaps the most widely shared environmental response to the *Torrey Canyon* spill (especially among the many children who observed the incident): “There are many stories about this disaster, but I write

what I witnessed with my own eyes. It was truly a pitiful sight to behold an oil covered bird, but many birds were saved due to the hard work of a lot of people.”⁶⁷ The sad reality was that, contrary to Darracott’s memory, most oiled birds rescued actually died despite efforts to rehabilitate them (the RSPCA later estimated that of 5000 birds sent to rehabilitation centers only some 500 survived), though it is perhaps suggestive that he recalls this effort as having been a success rather than a failure.⁶⁸ The suffering and death of so many seabirds was a powerful and emotive memory for many looking back on the impact of the oil, and perhaps the one area in which a clear connection between the disaster and environmental consciousness might be drawn. Accountant Philip Dredge spoke of it forcing him to think more about the effect of such disasters on wildlife in later years: “The creatures that were affected didn’t deserve it, and were helpless.”⁶⁹ Concern with the effect of oil on seabirds was widespread and mobilized hundreds into action. The *St Ives Times and Echo* reported on April 7, 1967, that, “[A]s always at such times, along with the bad comes great good; and any humane observer of St Ives activities in the past two weeks must have been grateful to, and inspired by, the intensive work ... carried on by the RSPCA for the alleviation of suffering caused to birds and other helpless creatures.”⁷⁰

Such responses might be expected, but historical attitudes towards wildlife among subaltern communities can vary enormously in time and place.⁷¹ The emotional response that accompanied the experience of seeing hundreds of sea-birds dying in pain and distress was significant, and the efforts made by many, including children, to intervene are to be distinguished from the official focus of “Operation Mop-Up.” Hundreds of local residents, as well as many people from outside the county, mobilized their own voluntary activity in support of the migratory sea-bird population. Actions included hours spent collecting and cleaning sea-birds, and many who sent money, rags, or other donations to local RSPCA cleaning stations or the Mousehole Bird Sanctuary. The *West Briton* recorded “students,

holidaymakers and people from every walk of life...coming to Cornwall in their hundreds” to aid the bird-rescue operation. The RSPCA’s Chief Inspector Ralph Gardner had “never realised before that so many people were concerned with the plight of the birds.”⁷² One of the key local figures in the organisation to clean and care for oil seabirds, Mr. Segal of St Ives, described this commitment to the *St Ives Times and Echo* as “the devotions of men, women and children who have been out day by day, sometimes in bitter weather, searching for the pathetically oiled birds. Boys in their early teens, as well as grown-ups have waded fully clothed into the sea to catch and save dying birds.”⁷³ One of those boys was Paul Jeffrey. Thirteen at the time of the disaster, and driven by a childhood interest in natural history, quickly got involved in the rescue operation. He recalled making numerous visits to Portreath beach to rescue razorbills. He took the birds back to his father’s shop in Redruth and cared for them there, cleaning them with eucalyptus oil. A sympathetic bus driver offered him free travel when he discovered what he was doing.⁷⁴

Popular concern with the fate of the birdlife was the only counterweight to the focus of bureaucratic and scientific activity. It was a kind of counter-hegemonic environmentalism, one that drew in participation from across the United Kingdom. The local branch of the RSPCA believed that it had to work hard against the ‘tendency to underplay the great damage to the animal and plant populations of our shores’.⁷⁵ It was also a response that expressed the central importance of nature in the lives of many Cornish children at the time. Darracott offers a detailed account of the range of wildlife that could be found around his home at Trereife in West Cornwall in the 1960s. His memories of this flora and fauna are precise and include accounts of both land and marine life. Remembering his experience in the present tense, he wrote: “I love all animals and consider myself to be a very lucky boy to be able to live among so many beautiful creatures.”⁷⁶ Popular concerns with the effects of oil and detergent on Cornwall’s wildlife thus reveal a broader conception of the scope of the

community affected by the disaster, one that surmounted the barrier between human and animal life.⁷⁷ Thus, while the oil threatened tourism, and the clean-up operation brought economic opportunity for some, the damage to local wildlife opened a space for others to challenge the prioritization of economic over environmental need.

The *Torrey Canyon* and the Greening of Britain

Our interviews show that these experiences of the impact of the *Torrey Canyon* and its clean-up did not necessarily lend themselves to the formation of explicitly environmentalist forms of consciousness or politics. It was unusual for those we interviewed to connect the *Torrey Canyon* to later involvement in wildlife conservation or environmentalist activism. Indeed, for many an explicit distancing towards the politics of environmentalism remained perfectly viable whilst simultaneously decrying the effects of the spill and clean-up operation. Even the most obvious exception to this rule, Jane Goodall Lloyd, who was brought up in Newquay and later became a biology teacher and involved with *Friends of the Earth*, cited the problem of sewage pollution and the work of the campaign group Surfers Against Sewage as a greater influence than the *Torrey Canyon*.⁷⁸ Amongst most of those interviewed there was a notable absence of criticism of the oil industry, with the exception of Angove, who remarked that “because the oil industry and the oil companies are so politically strong... they have a stranglehold around the neck of the whole world that wants fuel. So they tend to be a bit lax.”⁷⁹ But such an explicit critique of the oil industry’s environmental record was uncommon.

Exceptions to this rule tended to come either from relatively privileged, outsider voices or, unsurprisingly, from existing nature conservation organizations, whose voice arguably represented rather middle-class concerns. John Lister-Kaye’s autobiographical account of the incident offers a clear connection between the *Torrey Canyon* and the

development of his own nascent environmentalism, but his was the perspective of a businessman who lived outside the county. “I viewed the television with chilling, tingling dismay,” he subsequently wrote, “Nothing I had seen or heard in the news reports told me that we were facing a major environmental disaster. I just knew it. It seems obvious now, but back then we had no direct experience; such terms were not in common use.”⁸⁰

Unfortunately, he did not participate in the work of the clean-up operation, and his later involvement in the development of an environmental education center took place in Scotland. For Lister-Kaye *Torrey Canyon*, as important as it may have been in his own life narrative, was primarily a media memory rather than a direct experience as such.

One strongly conservationist voice was that of local farmer T.O. Darke (father of the playwright Nick Darke) who argued that the toxic effects of detergents on the marine food chain should be a source of concern. He argued in the local press against the prevailing wisdom of the local authorities and scientific expertise that the very vastness of the seas rendered the use of detergents pointless, as ultimately the sea would cleanse the beaches of oil. Worse, detergents were destructive of the ecologies of shoreline coves and inlets. “Is it,” he asked, “therefore, worth putting our shellfish industry and the whole ecology of our shoreline at risk for perhaps 20 years so that a few visitors can sit on a rock without getting their pants dirty this year?”⁸¹ A founder member of the Cornwall Naturalist Trust and a fisherman, Darke was one of few voices in contemporary Cornwall who would use the local media to articulate an ecological critique of the spill. Darke recorded the impact of the detergents in detail:

Here to the south of Porthcothan, where the comparatively sheltered and shallow tidal waters of the Atlantic form what might very well be unique as a cradle for the new generations of marine life required to repopulate those sadly depopulated shores between Newquay and the Lizard, many hundreds of gallons of detergents were used

on some oily rocks with little effect and with the consequent slaughter of marine creatures on a grand scale. In one cove which I visited 48 hours later, I reckon there was a 100 per cent kill of a wide variety of marine life, edible shellfish in their embryo stage included. Birds were avidly consuming dead fish and molluscs, the results of which we have yet to find out.⁸²

Darke connected these consequences with the political economy of tourism in the ironical observation, “Do the visitors for whom all this is being done, really want to sit on sterilised rocks and beaches watching a lifeless sea?”⁸³ The Cornwall Naturalists Trust provided the best organized voice of criticism regarding the clean-up operation and its effects on local wildlife. Along with representatives from the Cornwall Bird Watching and Preservation Society, they met with the government’s scientific committee advising on the oil spill and were successful in getting the Ministry of Housing and Local Government to issue instructions to local authorities regarding the appropriate use of toxic detergents.⁸⁴ How far this changed the actual application of these substances was, however, unclear.

A similarly eloquent expression of environmentalist sentiment came from the feminist and peace activist Dora Russell. She represented a common type of in-migrant to rural Cornwall, a middle class activist woman from a London background, and could not be thought of as speaking from the same position as most of those we interviewed. The author of *The Religion of the Machine Age* (1983) and an inhabitant of Porthcurno not far from the site of the wreck, Russell was also a founder member of the Conservation Society (1966). As Meredith Veldman has shown, the Conservation Society was one of the earliest forms of organized political environmentalism in Britain with a small membership committed to anti-growth economics and population control.⁸⁵ Russell wrote to the editor of the *Western Morning News* that “the wreck of the *Torrey Canyon*, whose oil is now flooding our beaches, shows only too clearly once more the danger to our natural environment and possibly our

very life of irresponsible modern enterprises.”⁸⁶ Russell attacked the way the authorities had “been more concerned with the rights and interests of the company and underwriters and the legal niceties than with the live creatures, human, animal, birds, vegetation who were likely to suffer most.”⁸⁷ She encouraged her readers to join the Conservation Society.

Both Darke and Russell lived in Cornwall and they articulated more explicitly than many of our interviewees the ecological consequences of the disaster seen through the lens of modern science. They were clearly conscious of ecological discourse and demonstrate the significance of a longer intellectual history of critique of modern industrial society and of conservationist and preservationist impulses. Yet, at the same time, the antagonism they express towards the privileging of social and economic needs and interests over the environment is more simplistic than that which is to be found in the oral testimony. Despite living in Cornwall both represented perspectives on the natural environment that came from far outside the experience of everyday life for many in the community they shared.

This reflects one of the main limitations of environmentalist discourse in making its mark on reactions to the disaster, and on the subsequent development of environmentalism in Britain. Such conservationist perspectives could easily be regarded as neglectful of the realities of everyday life. Everyday environmental attitudes were prone to produce more pragmatic and complex interventions, such as in the effort to clean sea birds. Nowhere is the antagonism more apparent than if we return to Lister-Kaye’s autobiographical *Song of the Rolling Earth*. The *Torrey Canyon* incident plays a central part in his decision to dedicate his life to conservation. Taking leave from his white-collar employment in industry, he travelled to Cornwall to experience the tragedy first hand and assist in the clean-up. But his narrative ends by recounting experiences of dead birds and marine animals and his decision to return home, noting that he felt “in the way,” unable to become involved in the activity that was the focus of everyone’s daily attention.⁸⁸ The key movement in Lister-Kaye’s encounter with

environmental consciousness is therefore a return from a catastrophe, rather than an active engagement with it. Of course, working-class people living in Cornwall did not have this privilege. Lister-Kaye's account suggests an inability, or an unwillingness, to traverse the divide between a very practical, if conflicted, environmental sensibility grounded in lived experience, and a self-conscious, perhaps ineffectual, intellectual conservatism.

None of this is to suggest that the *Torrey Canyon* disaster made no difference to popular reception of environmental ideas. Rather, oral testimonies reveal the profound complexity of popular engagements with environmentalism in the wake of the disaster. Where explicit connections were made between the *Torrey Canyon* and later concerns with the environment, they were often ambiguous, failing to reflect the straightforward ethical experience narrated by Lister-Kaye. Philip Wrixon, who spoke of his concern about the suffering of bird life in the wake of the spill, also thought that in some areas contemporary concern for the environment had "gone too far," requiring the relocation of animals for new bypasses, for example.⁸⁹ In everyday life, there is a constant need to negotiate the needs of social and economic reproduction with the protection of nature.

Nowhere is this tension more apparent than in the account given by Eric Busby of the effects of the *Torrey Canyon* in his own life. A retained firefighter in Gloucester he was one of those drafted into the beach cleaning operation. He later worked in the UK Environment Agency, and might therefore be expected to exhibit clear connections between these experiences. Nonetheless he recounted those connections in ambiguous and contradictory terms.

[Interviewer] Do you think that your experience of the *Torrey Canyon* influenced the way you think about pollution, environmental issues, those sorts of things?

[Eric] It probably did to a certain extent. Although I was probably influenced much more when I came out of the fire service and saw some of the needless pollution that

goes on about the place. I was with Cornwall Council and later with the Environment Agency, dealing with waste and water pollution. We used to have incidents with chemicals being dumped, and some people are so irresponsible with what they do, and I suppose in a way *Torrey Canyon* did, perhaps, affect me in that respect without really realising that it had. It was only later on that you look at things and think, like I said earlier about the detergent, at the time nobody thought anything about it but as time went on and more reports started coming out, different surveys about the effect on marine life and that sort of thing, and you then thought to yourself well actually they're now saying it was the chemicals that did more damage than the oil.⁹⁰

Busby repeats Caldwell's use of the word "probably," signifying a desire to maintain the ambiguity of the response. At one level he sees *Torrey Canyon* as having a kind of delayed effect. This makes sense as part of his life story as Busby went on to work with Cornwall County Council as a waste education officer and was very knowledgeable about environmental issues. Yet, when asked if he had been involved in "environmental movements or activism" of any kind he was definitive in his answer: "No. When I worked with the Environment Agency we sort of had a bit of a saying that a so-called environmentalist were a bit of a pain in many ways. Although there were some very, very clever people there and a lot of them were right, but you get the odd one who's a fanatic about it, but very often they're very ill-informed."⁹¹ Clearly there is a complex relationship here between the *Torrey Canyon* experience, working for the state conservation apparatus, and environmental consciousness. Busby acknowledges the influence of the *Torrey Canyon* on modern environmentalism in a general sense, even suggesting a qualified influence on his own ideas about nature and the environment, but then distances himself from environmentalists. Such testimony is indicative of the inadequacy of any straightforward notion of the greening of Britain in the wake of the *Torrey Canyon* disaster.

Conclusion

Everyday environmental attitudes are complex and contradictory. Even environmental disasters do not necessarily open a clear path to ecological awareness or political engagement with environmentalism. This is partly down to the nature of everyday life itself. The rhythms of the everyday seek to reproduce themselves in the wake of catastrophe.⁹² Nowhere are the antagonisms of everyday engagement with the environment more apparent than in popular responses to the *Torrey Canyon*. Where conservationists and environmentalists spoke in apocalyptic terms about the effects of the spill, most people got on with the task of living with the aftermath. There was no pursuit of culprits, or political response by civil society at large, in part because of the predominant concern not to upset local tourist trade. In its assessment of the aftermath, the Cornwall Naturalists Trust somewhat wistfully expressed the hope that in future disasters “the view of those concerned with the preservation of wildlife would not be overshadowed by concern for the economic consequences of a bad tourist season”.⁹³

Yet, this was a wish, not an expectation, and a way of thinking about the effects of the catastrophe not generally evident among those we interviewed, who tended to remember the *Torrey Canyon* as a discrete incident in time. The long-term ramification or lessons of disaster were ambiguous or unclear. Paul Leggo, a helicopter pilot in 1967, recalled that the busy period of the clean-up operation was concentrated into a fortnight of intense activity, followed by a rapid return to normal.⁹⁴ Certainly, for a few at the time this return to normality was a little too quick. In mid-April 1967, E.D. Booth wrote to the *Western Morning News* to complain of a tanker discharge reflecting the “callous attitudes of the tanker firms to the continual contamination of our beaches. This is no new thing – it has been going on for over twenty years.”⁹⁵ He suggested a boycott of oil companies in response.⁹⁶ Yet there

is no evidence that such a consumer boycott took place, and the idea that efforts to control multinational companies had failed to restrain decades of polluting activity reveals that the *Torrey Canyon* was part of a longer history of oil pollution that was accepted as part of everyday experience.

For these reasons, responses to the disaster were refracted through an experience of everyday life that gave little easy space to the adoption of a politicized environmentalist discourse. Rather, the aftermath was simply about getting used to new routines. Philip Ferguson, a child in 1967, remembered that following the *Torrey Canyon*:

There was a problem with tar, you used to always stand on it, for years and years afterwards you'd go out on the beach and there was big lumps of tar you used to stand in and everything. You could never get it off your shoes. You'd be there with a stick trying to get it out. It was a very tarry beach for years afterwards. You used to have these great lumps of it, huge great lumps. The small ones you sort of couldn't really see, like black pebbles. You could walk back up the beach, and look at the bottoms, we always use to check our shoes, and have five or six tiny little dots on the where there was tiny bits of tar. You had to get those off before you actually went home.⁹⁷

It is currently fashionable to talk about resilience as if it is something to be produced by the interventions of government expertise.⁹⁸ But economically insecure communities like that found in Cornwall are already remarkably resilient. Indeed, an environmentalist might reasonably claim they are, politically speaking, too resilient. Environmental change, even of the catastrophic variety, is quickly assimilated into a new normal. The need for adaptation even dominated the thinking of local conservation groups such as the West Cornwall Footpaths Preservation Society. Its secretary, Winifred M. White, wrote to the *Cornishman* in June 1967 that “now that we must unhappily accept that the attractiveness to visitors of our beaches will be diminished for some time to come. It becomes more than ever important to

take stock of the many other features which we can offer to holiday makers.”⁹⁹ The coast path, she suggested, offered a possible additional attraction with its “wonderful cliff scenery,” such that “It is essential to have the whole continuous path restored, especially here in West Cornwall, where our perimeter coast is our unique glory.”¹⁰⁰ Preservation could profit from catastrophe.

Yet, none of this should suggest that everyday notions of the needs of the environment were incapable of a critical response to disaster. Rather the critique was nuanced, expressed in the presence of antagonistic attitudes of the kind we have seen in the popular public struggle to save sea-birds and the powerful empathetic memory of their suffering and distress. Such a response did not need the permission of scientific, ecological discourse to articulate itself, or to mobilize practical action. It was enough that it sensed the tension between human needs and the wider natural world, and worked, the best it could, to close the gap. This is, perhaps an example of one of those moments where, what the critical geographer Alex Loftus has called “everyday environmentalism,” comes into focus: an environmentalism that was only very imperfectly connected to the formal organisation of historical conservationism, or to the development of scientific ecology.¹⁰¹ Yet its exclusion from each has perhaps ultimately fatally undermined the political potential of both, as well as contributed to an exaggerated historical focus on a process of greening over the environmentalism that is forever present in everyday life. Its presence can best be encountered through the art of conversation.

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Notes

¹ For narrative details of the events of March and April 1967 see Crispin Gill, Frank Booker, and Tony Soper, *The Wreck of the 'Torrey Canyon'* (Newton Abbott: David & Charles, 1967); Solly Zuckerman, *The Torrey Canyon. Report of the Committee of Scientists on the Scientific and Technological Aspects of the Torrey Canyon Disaster* (London: HMSO, 1967); Richard Petrow, *The Black Tide: In the Wake of Torrey Canyon*. (London: Hodder & Stoughton, 1968).

² Timothy Mitchell, 'Carbon Democracy', *Economy and Society* 38, no. 3 (August 2009): 399–432, doi:10.1080/03085140903020598; Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (London: Verso, 2011).

³ Charles More, *Black Gold: Britain and Oil in the Twentieth Century* (London: Continuum, 2009), 127.

⁴ Marion Caldwell, Penzance, July 17, 2012, 30:00-35:00.

⁵ Stephen Mosley, ‘Common Ground: Integrating Social and Environmental History’, *Journal of Social History* 39, no. 3 (2006): 915–33, doi:10.1353/jsh.2006.0007; J.F.M. Clark, ‘“The Incineration of Refuse Is Beautiful”: Torquay and the Introduction of Municipal Refuse Destructors’, *Urban History* 34, no. 2 (2007): 255–77, doi:10.1017/S0963926807004634; Sverker Sörlin and Paul Warde, ‘The Problem of the Problem of Environmental History: A Re-Reading of the Field’, *Environmental History* 12, no. 1 (January 2007): 107–30, doi:10.1093/envhis/12.1.107; *Environmental and Social Justice in the City: Historical Perspectives* (Cambridge: White Horse, 2011).

⁶ Marco Armiero and Lise Sedrez, eds., *A History of Environmentalism: Local Struggles, Global Histories* (London: Bloomsbury Academic, 2014).

⁷ John-Henry Harter, ‘Environmental Justice for Whom? Class, New Social Movements, and the Environment: A Case Study of Greenpeace Canada, 1971-2000’, *Labour / Le Travail* 54, no. 0 (2 February 2004): 83–119.

⁸ Rich Newman, ‘Making Environmental Politics: Women and Love Canal Activism’, *Women’s Studies Quarterly* 29, no. 1/2 (Spring 2001): 65–84; Amy M. Hay, ‘A New Earthly Vision: Religious Community Activism in the Love Canal Chemical Disaster’, *Environmental History* 14, no. 3 (7 January 2009): 502–27, doi:10.1093/envhis/14.3.502; Elizabeth D. Blum, *Love Canal Revisited: Race, Class, and Gender in Environmental Activism* (Kansas: University Press of Kansas, 2011).

⁹ Richard H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860* (Cambridge: Cambridge University Press, 1995); Harriet Ritvo, *The Dawn of Green: Manchester, Thirlmere, and Modern Environmentalism* (London: The University of Chicago Press, 2009); Fredrik Albritton Jonsson, *Enlightenment’s Frontier: The Scottish Highlands and the Origins of Environmentalism*, The Lewis Walpole Series in Eighteenth-Century Culture and History (New Haven, Connecticut: Yale University Press, 2013); Meredith Veldman, *Fantasy, The Bomb and the Greening of Britain: Romantic Protest, 1945-1980* (Cambridge: Cambridge University Press, 1994); Frank Zelko, *Make It a Green Peace! The Rise of a Countercultural Environmentalism* (New York: OUP USA, 2013).

¹⁰ Stefania Barca, ‘Laboring the Earth: Transnational Reflections on the Environmental History of Work’, *Environmental History* 19, no. 1 (January 2014): 3–27, doi:10.1093/envhis/emt099.

¹¹ Fabien Locher and Jean-Baptiste Fressoz, 'Modernity's Frail Climate: A Climate History of Environmental Reflexivity', *Critical Inquiry* 38, no. 3 (March 2012): 579–98, doi:10.1086/664552.

¹² Stephen Hussey and Paul Thompson, *The Roots of Environmental Consciousness: Popular Tradition and Personal Experience* (London: Routledge, 2002); Allan Shepherd, 'Voices from a Disused Quarry - Change Making, Class Dynamics and Technological Experimentation at the Centre for Alternative Technology', *Oral History* 43, no. 2 (2015): 35–50.

¹³ Interviews were recorded by Timothy Cooper, Anna Green and Jos Smith. Interviews were organized around a general interview schedule under five headings: i) context, autobiographical data and family story; ii) memories of the event, including sensory perceptions, emotional and social responses, individual and community actions; iii) knowledge of media coverage of this and other oil spills; iv) short and long term impacts of the disaster; and v) contemporary perspectives on environmental issues. References to the oral history recordings are identified by name of interviewee, place and date of interview, time on recording (indexed in five minute segments). The recorded interviews in the possession of the authors, and will be deposited (subject to any conditions specified on consent forms) in the Cornwall Record Office. Two interviewees requested anonymity and have been given pseudonyms.

¹⁴ Shane Ewen, 'Socio-Technological Disasters and Engineering Expertise in Victorian Britain: The Holmfirth and Sheffield Floods of 1852 and 1864', *Journal of Historical Geography* 46 (October 2014): 13–25, doi:10.1016/j.jhg.2014.05.021.

¹⁵ Zuckerman, *The Torrey Canyon. Report of the Committee of Scientists on the Scientific and Technological Aspects of the Torrey Canyon Disaster*, 35–38.

¹⁶ Zuckerman, *The Torrey Canyon. Report of the Committee of Scientists on the Scientific and Technological Aspects of the Torrey Canyon Disaster*, 9.

¹⁷ United Kingdom, National Archives (NA) HLG 120/1132 *Advisory Committee on Oil Pollution of the Sea*.

¹⁸ National Archives UK (NA) FT 48/29 Nature Conservancy booklet by D.S. Ranwell, *Extent of Damage to Coastal Habitats due to the Torrey Canyon Incident, 1967*

¹⁹ *Ibid.*, 46.

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- ²⁰ Brian Sheen, St Stephen, 26 July 2012, 10:00-15:00; Vivian Stratton, Zennor, May 29, 2012: 40:00-45:00; Philip Wrixon, Bodmin, June 11, 2012, 15:00-20:00
- ²¹ John Sheail, 'Torrey Canyon: The Political Dimension', *Journal of Contemporary History* 42, no. 3 (7 January 2007): 485–504, doi:10.1177/0022009407078329.
- ²² Philip J. Payton, *Cornwall since the War: The Contemporary History of a European Region* (Redruth: Institute of Cornish Studies : Dyllansow Truran, 1993).
- ²³ Bernard Deacon, 'Imagining the Fishing: Artists and Fishermen in Late Nineteenth Century Cornwall', *Rural History* 12, no. 2 (2001): 159–78, doi:10.1017/S0956793300002429.
- ²⁴ *Ibid.*, 174.
- ²⁵ William Cronon, 'The Trouble with Wilderness: Or, Getting Back to the Wrong Nature', *Environmental History* 1, no. 1 (January 1996): 7, doi:10.2307/3985059.
- ²⁶ Philip Payton, Alston Kennerley, and Helen Doe, *The Maritime History of Cornwall* (University of Exeter Press, 2014).
- ²⁷ *The Economist* April 1, 1967, 62
- ²⁸ Antony Farrell, St Ives, May 28, 2012, 00:00-05:00.
- ²⁹ Christopher Boyer, 'The Ecology of Class: Revolution, Weaponized Nature, and the Making of Campesino Consciousness', *Historical Reflections* 41, no. 1 (2015): 1939–2419, doi:10.3167/hrrh.2015.410104.
- ³⁰ John Urry, *The Tourist Gaze* (SAGE, 2002); Andrew Denning, 'From Sublime Landscapes to "White Gold": How Skiing Transformed the Alps after 1930', *Environmental History* 19, no. 1 (1 January 2014): 78–108, doi:10.1093/envhis/emt105.
- ³¹ Colin Kenney, Mullion, June 1, 2012, 10:00-15:00.
- ³² Stuart Charles, Plymouth, June 18, 2012, 15:00-20:00.
- ³³ *St Ives Times and Echo*, Friday, May 19, 1967.
- ³⁴ *The West Briton*, Thursday, March 23, 1967.
- ³⁵ Farrell; 15:00-20:00.
- ³⁶ Sheen; 15:00-20:00

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- ³⁷ CRO CC23/3/3/, Cornwall County Council Public Relations Department press release, ‘The State of Cornish Beaches’, May 8, 1967.
- ³⁸ *St Ives Times and Echo*, Friday, May 5, 1967.
- ³⁹ Cornwall Record Office (CRO), CC23/3/3/1, *Torrey Canyon*, Handbill.
- ⁴⁰ David Stevens, Penzance, July 16, 2012, 10:00-20:00.
- ⁴¹ Farrell, 10.00-15.00.
- ⁴² Alison Stuckey, Hayle, May 29, 2012, 05:00-10:00.
- ⁴³ Richard Angove, Penryn, June 21, 2012, 15:00-20:00.
- ⁴⁴ *Ibid.*
- ⁴⁵ Farrell, 15:00-20:00.
- ⁴⁶ Robert Cook, Truro, July 17, 2012, 10:00-15:00.
- ⁴⁷ Farrell 20.00-25.00.
- ⁴⁸ CRO CC/FBG/10/1/1, ‘Operation Oil Slick’ photographic album. We are grateful to the archivists of the Cornwall Record Office for pointing to this telling omission.
- ⁴⁹ *The Cornish Guardian*, April 6, 1967, 2.
- ⁵⁰ CRO AD/262/1 Cornwall Naturalists Trust, *Bulletin*, 5, July 1967
- ⁵¹ NA MAF/209/2710 Oil Pollution. Shipwreck of the Torrey Canyon.
- ⁵² *Ibid.*
- ⁵³ *St Ives Times and Echo*, Friday, May 19, 1967.
- ⁵⁴ J. E. Smith, ‘*Torrey Canyon*’ *Pollution and Marine Life. A Report by the Plymouth Laboratory of the Marine Biological Association of the United Kingdom* (Cambridge: Cambridge University Press, 1968), 22.
- ⁵⁵ Colin Kenney, 10:00-15:00.
- ⁵⁶ Stuart Charles, 15:00-20:00.
- ⁵⁷ Derek Richards, Porthleven, June 31, 2012, 05.00-10.00. *Pathé News* reports of the operation at the time also showed groups of soldiers pouring detergent out onto beaches from drums and watering cans ‘Torrey Canyon Disaster’, accessed March 14, 2015, <http://www.britishpathe.com/video/torrey-canyon-disaster-1>.

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- ⁵⁸ Philip Wrixon, Salisbury, June 11 2012, 15:00-20:00.
- ⁵⁹ Philip Ferguson, Camborne, June 18, 2012, 10:00-15:00.
- ⁶⁰ Viv Stratton, St Ives, May 29, 2012: 40:00-45:00.
- ⁶¹ Brian Sheen, 15:00-20:00.
- ⁶² Derek Richards, 25:00-30:00.
- ⁶³ ‘The *Torrey Canyon* Disaster 1967 Clean up’, October 20, 2012,
https://www.youtube.com/watch?v=C1R6_o42_ac.
- ⁶⁴ Cornwall Record Office, CC/23/3/3/2, ‘Torrey Canyon’ Disaster, 1967-72
- ⁶⁵ Brian Wynne, *Rationality and Ritual : Participation and Exclusion in Nuclear Decision-Making* (London: Earthscan, 2011).
- ⁶⁶ Eric Kemp, St Ives, May 28, 2012, 45:00-55:00.
- ⁶⁷ Michael John Darracott, *Proper Cornish Childhood* (Claygate: Grosvenor House Publishing Limited, 2008), 69.
- ⁶⁸ CRO AD 262/1, Cornwall Naturalists Trust, *Bulletin*, 5, p. 5.
- ⁶⁹ Philip Frank Dredge, Ivybridge, June 19, 2012, 10:00-15:00.
- ⁷⁰ *St Ives Times and Echo*, April 7, 1967.
- ⁷¹ Giovanni Contini, ‘Animals, Children and Peasants in Tuscany’, in *The Roots of Environmental Consciousness: Popular Tradition and Personal Experience* (London (UK), United Kingdom: Routledge, n.d.), 55–62.
- ⁷² *The West Briton*, Monday, April 3, 1967.
- ⁷³ *St Ives Times and Echo*, Friday, March 31, 1967.
- ⁷⁴ Paul Jeffrey; Camborne, June 18, 2012, 05:00-10:00.
- ⁷⁵ CRO, AD/262/1, Cornwall Naturalists Trust, *Bulletin*, 5, July 1967.
- ⁷⁶ Darracott, *Proper Cornish Childhood*, 31.
- ⁷⁷ Jacques Derrida, *The Animal That Therefore I Am*, ed. Marie-Louise Mallet, trans. David Wills (New York: Fordham University Press, 2008).
- ⁷⁸ Jane Lloyd, St Agnes, June 14, 2012, 05:00-10:00; 15:00 – 20:00.
- ⁷⁹ Angove, 20:00-25:00.

⁸⁰ John Lister-Kaye, *Song of the Rolling Earth: A Highland Odyssey* (Little, Brown Book Group Limited, 2004), 27.

⁸¹ *Cornish Guardian*, Thursday April 13, 1967.

⁸² *Cornish Guardian*, April 20, 1967.

⁸³ *Ibid.*

⁸⁴ Cornwall Record Office AD 262/1 Cornwall Naturalists Trust Bulletin No. 5.

⁸⁵ Veldman, *Fantasy, The Bomb and the Greening of Britain*, 217–22.

⁸⁶ *Western Morning News*, April 1, 1967, 6.

⁸⁷ *Ibid.*

⁸⁸ Lister-Kaye, *Song of the Rolling Earth*, 33.

⁸⁹ Wrixon, 25:00-40:00.

⁹⁰ Eric Busby, Penzance, May 20, 2012, 45:00-50:00.

⁹¹ Eric Busby, 55.00-60.00.

⁹² Henri Lefebvre, *Rhythmanalysis: Space, Time and Everyday Life* (Continuum, 2004); Stanley Aronowitz, 'The Ignored Philosopher and Social Theorist: On the Work of Henri Lefebvre', *Situations: Project of the Radical Imagination* 2, no. 1 (29 July 2007), <http://ojs.gc.cuny.edu/index.php/situations/article/view/175>.

⁹³ CRO AD/262/1, Cornwall Naturalists Trust, *Bulletin*, 5, July 1967

⁹⁴ Paul Leggo, Penzance, June 6, 2012, 35:00-40:00.

⁹⁵ *Western Morning News*, April 14, 1967, 6.

⁹⁶ *Ibid.*

⁹⁷ Philip Ferguson, 15:00-20:00.

⁹⁸ Jeremy Walker and Melinda Cooper, 'Genealogies of Resilience From Systems Ecology to the Political Economy of Crisis Adaptation', *Security Dialogue* 42, no. 2 (1 April 2011): 143–60, doi:10.1177/0967010611399616.

⁹⁹ *The Cornishman*, June 8 1964.

¹⁰⁰ *Ibid*

¹⁰¹ Alex Loftus, *Everyday Environmentalism: Creating an Urban Political Ecology* (Minneapolis: University of Minnesota Press, 2012).