SITES OF REMEMBERING

Landscapes, Lessons, Policies

Vikas Lakhani
Eveline de Smalen

Transformations in Environment and Society

2018 / 3

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Introduction: Using Memory Studies in Environmental Policy

In the winter of 2018, a substantial environmental controversy dominated public debate in the Netherlands. Over the course of an unusually cold winter, the Oostvaardersplassen, a nature reserve that has been a Ramsar wetland of international importance since 1989 and a Natura 2000 site since 2010, saw the death of a high number of its large herbivores due to lack of food. The management of the Oostvaardersplassen is largely in line with rewilding practices, and intervention is kept to a minimum. For years, this conviction has clashed with the popular opinion that suggested that, since the Oostvaardersplassen are located in a polder that was reclaimed only in 1968 and are not connected to any larger reserves, they cannot be considered *nature*. Its managers, therefore, have a responsibility to care for the animals living in the area, including feeding them to keep them from starvation. In 2018, this debate escalated and led to protests, private feeding initiatives, and death threats addressed to foresters, until the province was forced to deviate from the management plan and feed the animals.

This case exemplifies both the challenge and importance of policymaking that acknowledges the complexities of relations between people and their environment. Public institutions must strive towards sustainable long-term planning, formulating flexible and inclusive policies, and encouraging two-way communication with different stakeholders. In this way, they gain legitimacy for their policy while simultaneously legitimizing people's experience. This is exactly the process that led to the European Union's becoming one of the world's leading actors in environmental regulation in the 1990s. The EU's engagement with environmental policy was a response to increasing environmental concern amongst its citizens, and creating legislation was seen as an opportunity to enhance the EU's legitimacy.[1]

Environmental regulations have always been dependent on memories and narratives. A key challenge for ecologists and environmental activists advocating for conservation of the Wadden Sea in the mid-twentieth century, which today is also a Natura 2000

1 R. Daniel Kelemen and David Vogel, "Trading Places: The Role of the United States and the European Union in International Environmental Politics," *Comparative Political Studies* 43 no. 4 (2010), 427–56, esp. 443–4.

site, was the fact that a legacy of disregard, honed over millennia[2] obstructed an appreciation of the Wadden Sea as a place of value. In their campaigns, which proved to be effective, it was vital that they "reframe[d] the Wadden Sea scientifically, visually, and narratively."

The European Commission recognizes that "Europe faces huge challenges in reducing inequality and social exclusion."[3] In this age of climate change, pollution, environmental degradation, and increasing risk of extreme weather events and disasters, these challenges cannot be disentangled from the physical environment. To enhance inclusive, innovative, and reflective societies and to foster resilient communities, environmental management has to be treated with sensitivity to its citizens' memories, identities, and cultural heritage, and vice versa.

The increasing risk of disaster due to changing climate and unsustainable environmental management practices is particularly pertinent to this volume, in which many papers focus on disasters specifically. In times of crisis, public institutions often assume that emotion-laden communities do not act rationally and need assistance in evaluating themes of importance and meaning for a complete recovery. However, these institutions can underestimate the value of emotions and affect. Roberto E. Barrios argues that governments need to formulate policies that take emotion and affect into account.[4] If institutions fail to do so, their policies run the risk of rejection by affected communities. The authors in this volume argue that public institutions that recognize the complexities of remembering and forgetting have better chances of formulating effective policies. Similarly, the voices of marginalized groups, which are too often not heard but can offer a different perspective that is important for developing holistic responses to events, need to be acknowledged. Sites of change are unique, both environmentally and socially, and failure to recognize this can create new problems. For instance, the state government of Maharashtra adopted a village for reconstruction after the Gujarat earthquake in India in 2001 but relocated the entire village to a low-lying area, which gets flooded with salt water every year. As a result,

2 Christian Jouanin, cited by Anna-Katharina Wöbse in, "Space, Place, Land, and Sea: The 'Ecological Discovery' of the Global Wadden Sea," in *Spatializing the History of Ecology: Sites, Journeys, Mappings,* eds. Raf de Bont and Jens Lachmund, 204–222 (New York: Routledge, 2017); 205.

3 European Commission, "Europe in a Changing World," http://ec.europa.eu/programmes/horizon2020/en/h2020-section/europe-changing-world-inclusive-innovative-and-reflective-societies (accessed 31 May 2018).

4 Roberto E. Barrios, *Governing Affect: Neoliberalism and Disaster Reconstruction* (Lincoln; London: University of Nebraska Press) 2017.

the newly constructed houses deteriorated within a few years and the dilapidated village stands without a single inhabitant.

This volume addresses the specific ways in which memories can contribute to effective policymaking. It presents a diverse selection of case studies that show that for policies to be effective, they need to be based on participation, collaboration, and coordination. In the wide range of disciplines it includes, the volume also implicitly showcases the usefulness of interdisciplinarity: different disciplines can offer different insights and solutions, and together they can provide a wide overview of how to account for social cohesion and critical heritage in the move forward to addressing the environmental issues society faces today. Based on findings from 11 essays on a wide variety of case studies, the editors suggest three recommendations:

Recommendation 1: Acknowledge the existence and relevance of counternarratives
Recommendation 2: Utilize citizens' memories as a source of local knowledge
Recommendation 3: Support resilience in communities by recognizing the role of both remembering and forgetting

For elaborations on these, see the "Recommendations for Policymakers"section at the end of this volume.

We acknowledge that these recommendations are broad in nature: we maintain that this is necessary so they are relevant to and can be applied in different contexts, and can be translated into specific actionable strategies on a case-by-case basis. These strategies can then be tailored to the relevant communities and environments in which they will be applied. We do not claim to present the intricacies and complexities of policymaking in this volume, but we offer insights from academic research that can contribute to a richer understanding of effective conservation and management practices.

Memory as Resource

Caroline Fredriksson, Grit Martinez, Magnus Larson, and Beate Feldmann Eellend

Using Historical Storms for Flood Risk Management: The 1872 Storm in South Sweden

Risk analyses aim at answering three principal questions:[1] What can happen? What is the probability that it will happen? If it happens, what are the consequences? Even though it is both practically and theoretically impossible to map all the events that can possibly occur, referring to historical storm events when assessing coastal flood risk can bring us closer to the answers to those three questions, all of which are critical for planners and policymakers.

Risk is commonly defined as the product of probability and consequence. To determine the probability of flooding, knowledge of extreme water levels, the frequency of their occurrence, storm duration, and simultaneous wave climate is required. The probability of extreme events is typically determined by statistical extreme-value models. However, wave and water-level data series are often short compared to the frequency of occurrence of interest, limiting the accuracy and applicability of model results. Therefore, information about historical storm events that occurred before data measurements started is an important complement to these analyses.[2]

Historical storm events also provide knowledge about impact, and thus the second component of risk: consequence. In risk analysis, the state of the system is an essential aspect.[3] The state of the system changes over time, implying that observed consequences of historical events are not directly transferable to present or future societies. Studying how the consequences of flooding change over time can provide insight into how the state of the system has evolved. The collective memory of storm events is commonly a trigger to improve flood risk management in affected areas. Absence of memory may instead lead to unsustainable development of flood-prone areas and thereby increased risks.

1 Stanley Kaplan and B. John Garrick, "On the Quantitative Definition on Risk," *Risk Analysis* 1, no. 1 (1981): 11–27.
2 Paolo Ciavola, M. D. Harley, and C. den Heijer, "The RISC-KIT Storm Impact Database: A New Tool in Support of DRR," *Coastal Engineering* 134 (*April* 2018): 24–32.
3 Yacov Y. Haimes, "On the Complex Definition of Risk: A System-Based Approach," *Risk Analysis* 29, no. 12 (December 2009): 1647–54.

This paper discusses the relation between flood risk management and collective memory using the 1872 storm in the Baltic Sea as a case study; how did the affected countries respond to the disaster and how did risk awareness evolve over time in the flood-prone areas of Sweden?

The 1872 Storm

On 13 November 1872, an extreme storm surge in combination with large waves caused large-scale devastation on the Danish, German, and Swedish Baltic Sea coast (figure 1). In total, about three hundred people died and more than fifteen thousand lost their homes.[4] At that time, it was more common that people lost their lives at sea, due to unsafe boats and lack of meteorological warning systems, whereas coastal flooding was rare in this area, which has no astronomical tide. Still, about one hundred people drowned on land in Denmark, 63 in Germany, and five in Sweden, making this event one of the major natural disasters in the South Baltic Sea.[5]

The water level was measured to 3.4 meters above normal in Travemünde, Germany, and similar water levels were observed on the Danish southeast coast.[6] On the south coast of Sweden, the water level is estimated to have been a maximum of about 2.4 meters above normal.[7] These water levels are about 1 meter higher than the maximum water levels observed during the last one hundred years on these coasts.

In Sweden, where there are no water-level records from that time, extreme value analysis of the 1872 storm results in a return period of seven thousand years, which is an unrealistically high value. If it were not for the historical observation of the storm, it

4 Dennis Feuchter, Christof Jörg, Gudrun Rosenhagen, Renate Auchmann, Olivia Martius, and Stefan Brönnimann, "The 1872 Baltic Sea Storm Surge," in *Weather Extremes During the Past 140 Years*, eds. Stefan Brönnimann and Olivia Martius (Bern: Geographica Bernensia, 2013).

5 Kjeld Ejdorf, *Stormfloden Den 13. November Danmarks Störste strandingskatastrofe* (Copenhagen: Skib Forlag, 2002); Caroline Fredriksson, Beate Feldmann Eellend, Magnus Larson, and Grit Martinez, "The Role of Historical Storm Events in Risk Analysis: A Study of the Coastal Flood Events in 1872 and 1904 Along the South and East Coast of Scania, Sweden," *VATTEN – Journal of Water Management and Research* 73 (2017): 93–108.

6 Jürgen Jensen and J. H. Müller-Navarra, "Storm Surges on the German Coast," *Die Küste: Archive for Research and Technology on the North Sea and Baltic Coast* 74 (2008): 92–124.

7 Caroline Fredriksson, Nader Tajvidi, Hans Hanson, and Magnus Larson, "Statistical Analysis of Extreme Sea Water Levels at the Falsterbo Peninsula, South Sweden," *VATTEN—Journal of Water Management and Research* 72 (2016): 129–42.

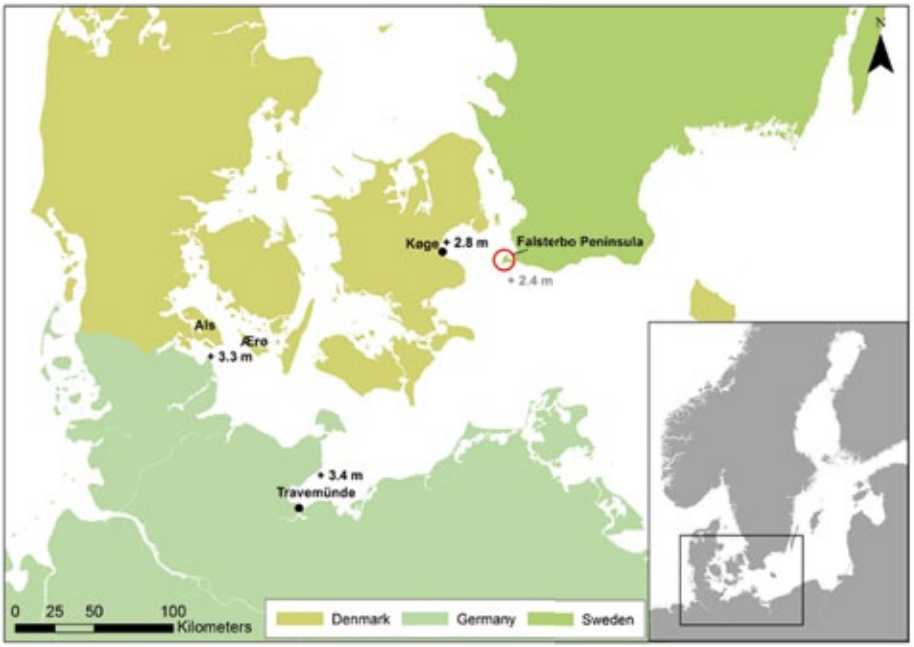

Figure 1: Map of the impacted area with observed and estimated storm surge still-water levels (m above normal). Source: the authors

would seem to be an almost impossible event. Interestingly, historical documents from Germany describe a storm surge of the same magnitude occurring in 1320, and two slightly smaller events in 1625 and 1694, which are mentioned in both Danish and German records,[8] suggesting a much shorter return period for the 1872 storm, in the order of three hundred to five hundred years. Similar results have been found when comparing eighteenth-century storm-surge data to estimated return periods along the Dutch coast.[9] In these cases, where extreme value models underestimate the probability of the most extreme events, historical observations can be used to identify possible events—answering the question of what *can* happen. If included in statistical models, they can also improve estimations of probability.

8 Jensen and Müller-Navarra, "Storm Surges on the German Coast"; Thade Petersen, "Stormfloden 1872," *Geografisk Tidsskrift* 27 (1924): 16–24.

9 Fedor Baart, Marcel A. J. Bakker, Ap van Dongeren, C. den Heijer, Sytze van Heteren, M. W. J. Smit, Marke van Koningsveld, and A. Pool, "Using 18th Century Storm-Surge Data from the Dutch Coast to Improve the Confidence in Flood-Risk Estimates," *Natural Hazards and Earth System Science* 11, no. 10 (2011): 2791–2801.

Flood Risk Awareness in South Sweden

Natural disasters contribute to increased risk awareness in society; also, the collective memory of a disaster or accident can provide knowledge about events that are not self-experienced. Flood events are often followed by technical developments and improved coastal protection, decreasing the flood risk.[10] In fact, risk awareness in itself leads to decreased risks.[11]

There are several indicators of societal risk awareness in south Sweden before the 1872 storm and in the immediate response to the event. The low-lying Falsterbo Peninsula in the southwest of Sweden has been described as flood prone in documents dating back to the eighteenth century.[12] In 1872, the two cities Skanör and Falsterbo were located on the most elevated part of the peninsula (figure 2). Seaweed dikes reaching 1.65 meters above ground surrounded the cities and their pasture, serving both as fencing and flood protection.[13] The storm damaged the dikes, but they were quickly rebuilt by the local associations responsible for their maintenance. Houses in need of repairs after the storm were reinforced, with the flood-resistant bases of the walls built higher to withstand future floods.

The presence of dikes before the 1872 storm indicates that the population of the Falsterbo Peninsula was aware of the flood risk and had taken measures to prevent flooding. The 1872 storm exceeded the design conditions for which the dikes were built, and further measures were taken, such as improving house construction to reduce the damage in case of a new storm event of comparable magnitude.

The flood risk on the Falsterbo Peninsula has subsequently increased due to the extensive development of low-lying flood-prone areas (figure 2). Meanwhile, the dikes have not been maintained and there is no longer a coherent flood protection strategy for the cities; therefore, both the probability and the consequences of flooding have increased. In many places along the south Swedish coast, vulnerability has increased through de-

10 Franz Mauelshagen, "Disaster and Political Culture in Germany since 1500," in *Natural Disasters, Cultural Responses: Case Studies toward a Global Environmental History*, eds. Christof Mauch and Christian Pfister (Lanham, MD: Lexington Books, 2009).
11 Kaplan and Garrick, "On the Quantitative Definition of Risk."
12 Albert Eskeröd, *Skånes kust* (Stockholm: LT förlag, 1960).
13 Lars Dufberg, *Skanör och Falsterbo efter "sillatiden"* (Skåne län: Vellinge kommun, 1994).

velopment without sufficient flood protection. At the same time, vulnerability has decreased due to higher insurance cover and less dependency on fishing as livelihood.

In 1904, another storm caused flooding in the same area, and documentation from this event reveals that the 1872 storm was still in the collective memory and had an impact on people's reaction to this storm.[14] Since then, however, the 1872 storm has been forgotten by successive generations of coastal dwellers in Sweden. The extensive migration to coastal areas by people working in other parts of the country, and the absence of flood markers—in the whole of Sweden there is only one such marker—may help to explain the lack of any collective memory.

Figure 2: Areas flooded on the Falsterbo Peninsula in 1872 and today. ©Lantmäteriet [I2014/00579]

During the late nineteenth century, a large part of the population along the coast made a living from fishing or shipping. On the Swedish coast, more than one hundred fishermen's houses were destroyed during the 1872 storm and a large proportion of their boats and fishing equipment were wrecked, leaving the already poor coastal population without possessions and the means to earn an income. However, harbors and boats were quickly restored by local associations. Private donations, both local and national, helped to rebuild the coastal societies, which in some cases led fairly quickly to flourishing local economies.[15]

A society's ability to bounce back after a disaster is commonly described in terms of resilience. In Sweden, different forms of the coastal societies' resilience have developed over time. In 1872, the local communities had stronger social bonds than today because

14 Frans Löfström, *Kring Sandhammaren* (Lund: Gleerups: 1946).
15 Anne Asplund, *Abbekås—i forna dar* (Skurups kulturnämnd, 1988).

the citizens were more dependent on one another. These social structures facilitated a quick restoration of houses and infrastructure. The citizens of today rely to a greater extent on the municipality, the government, or their insurance companies to provide support after a disaster. The economy is stronger overall, and also today, private donations and voluntary labor are commonly organized in response to disasters.

The experience of the 1872 storm shows that through cooperation and benevolent donors, the basic functions of society can recover quickly. However, human lives can never be recovered. In south Sweden today, thousands of houses have been built in flood-prone areas, and if the 1872 storm were to repeat itself, many more lives would be at risk. It is perhaps not necessary to build physical structures to protect dwellings against a similar event, but prognosis and warning systems together with evacuation/action plans are required to ensure safety in the lowest-lying areas.

The Collective Memory of the Storm in Sweden, Denmark, and Germany

In Sweden, the 1872 storm has more or less been forgotten. In Denmark and Germany, collective memory and awareness of the storm are much greater. In those countries, there are many more publications about the storm and, even today, the storm is often used as a design criterion for coastal protection measures.

Several explanations could account for these differences in collective memory between the countries. Firstly, storm damages were less extensive in Sweden compared to the other countries; the number of casualties, including those deceased at sea, is estimated to be 23, and only about one hundred houses were destroyed. Secondly, Denmark and Germany also have coasts on the North Sea, and have thereby experienced worse storms and coastal flooding that have led to increased risk competence, in which memory and measurements play a central role. Thirdly, in Denmark and Germany there are multiple memory markers from storms (figure 3). The flood level is carved out in stones at public places. In Sweden, there is only one such stone that is known of, at the Falsterbo Peninsula, and it has been moved several times from its original position. Last, the organization of coastal management differs between the countries. In the case of Germany, the transformation of coastal protection duties from private initiatives to government strategies is coupled with the foundation of the German Empire in 1871. The 1872 storm accelerated the turning

point in coastal flood management. After 1872, storm-surge public-defence programs were systematically planned and implemented by the Prussian authorities along the German Baltic Sea coast. In Sweden, the responsibility for coastal protection is unclear and there are no national or state policies and guidelines as in Denmark and Germany.

Figure 3: Flood marker from the 1872 storm in Wismar, Germany. Photo: Caroline Fredriksson.

Late-nineteenth-century society in Sweden faced different risks compared to those it faces today. For example, the city of Skanör was almost completely devastated by fire in 1874, and again in 1885. The threat of city fires has significantly decreased and, in the process, the 1872 storm has become relatively significant as a past disaster that could strike again. Also, the risk has increased in terms of more damaging consequences due to the development of low-lying areas. With sea-level rise, the probability of flooding will also increase, and events similar to that of 1872 will occur much more frequently. Therefore, the collective memory of the 1872 storm is more important today than before. In Sweden, numerous public talks, articles in the media, and radio documentaries have served as a reminder of the 1872 storm.

Climate change adaptation work has also put a new focus on flood risk and contributed to increased risk awareness. The water level during the 1872 storm in south Sweden corresponds to the estimated extreme water level with a one-hundred-year return period in the year 2100. Research on the 1872 storm reveals that what planners are currently assuming to be an extreme event some decades into the future had already happened 150 years ago— and it is something that we should be prepared for today. Policy needs to be informed not just by statistical models, but also by the lessons of history.

Colin R. Sutherland

Remembering and Igniting Fires: Prescribed Burns as Memory Work

For better or worse, the Anthropocene is an epoch defined by human relationships with the planet. We are simultaneously noting our impact on the environment and the ways in which we are intimately and vulnerably implicated in complex ecosystems that are not static but in flux. What we know is that in some cases human relationships with the planet are not absolutely extractive and destructive, but can also be about flourishing and making more livable worlds.[1] In this era of realization and awakening to the extent of our planetary destruction, there is an opportunity to learn to "live with" the planet, rather than orchestrate its slow destruction.[2] This process requires an exercise in troubling how we think about the landscapes we come to live in, the policies we enact and work within, and the possible methods we have at our disposal to consider ways to live in the Anthropocene—an era narrated by logics that have pushed us into our present predicament.

The Anthropocene could be figured as an era of reflexivity, an attempt to grapple with how we have lived or failed to live on this planet. My research on wildfire managers and their strategies in Canadian national parks has suggested to me that there are lessons to be learned from those grappling with natural processes that have been in some regions resisted, and in some cases demonized, over the last few centuries. For many years fire has been resisted, contained, and suppressed as a threat to accumulation and to particular visions of nature. The reordering of landscapes, like the reordering of the atmosphere, is one way in which the Anthropocene has been articulated. Other readings of fire can show—and have shown—how fire has played a role in ecosystems across the globe, as a process of renewal and regeneration. In many cases fire has been figured as essential to the maintenance of ecosystems and the survival of certain species.

Today, those encountering the contradictions of management systems that attempt to discipline nature and suppress fire are perhaps well placed to teach us about finding new ways to live with those processes that are often figured as threats and disasters. Fire

1 Rosemary-Claire Collard, Jessica Dempsey, and Juanita Sundberg, "A Manifesto for Abundant Futures," *Annals of the Association of American Geographers* 105, no. 2 (2015): 322–30.

2 Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham, NC: Duke University Press, 2016).

occupies a strange position in this discussion because it is simultaneously a natural occurrence, and is in fact essential to the lives of many fire-dependent or adapted species, but is also positioned to become a more pronounced and potentially disastrous feature in a warming and drying climate. It also has a charisma that refuses to be ignored. This peculiar position as both a natural process and an anthropogenic disaster could be an opportunity to learn to live in what Anna Tsing calls ruin.[3]

Burning Issue: The Importance of Remembering Past Fires

Environmental history reminds us that our relationship with environments is not apolitical or ahistorical but is instead nested in complex histories and power struggles. In the context of Canada, we have to appreciate that centuries of Indigenous forms of land care[4] were violently replaced as settler colonialism cleared the way for a new relationship to land,[5] and thus also to fire. Fire became inconvenient to settlement and extraction and was also eliminated from so-called pristine wilderness areas like Canada's celebrated national parks. Though the Anthropocene is often framed as an era of universal human impact, Zoe Todd reminds us that the "negative" impacts of the Anthropocene need be traced back to seats of power and imperial control and that there are human relationships with the planet that exist that do not necessarily spell out planetary destruction.[6] Whether through the capitalist logics of various iterations of forestry,[7] the settlement of grasslands into farmlands,[8] or the shattering of landscapes into a manageable grid of control,[9] much of Canadian colonialism could be understood as a change in how (and which) humans relate to the land. The reordering of landscapes via institutions

3 Anna Tsing, *The Mushroom at the End of the World* (Princeton, NJ: Princeton University Press, 2012).
4 Throughout my fieldwork, fire managers have noted Indigenous land practices with fire in management plans and/or in interviews. Indigenous fire practice and care is relatively under-researched.
5 For more on relations to land see Glen Sean Coulthard, *Red Skin, White Masks: Rejecting the Colonial Politics of Recognition* (Minneapolis: University of Minnesota Press, 2014).
6 Zoe Todd, "Indigenizing the Anthropocene," in *Art in the Anthropocene: Encounters among Aesthetics, Politics, Environment, and Epistemology*, ed. Heather Davis and Etienne Turpin, 241–54 (London: Open Humanities Press, 2015). See also Heather Davis and Zoe Todd. "On the Importance of a Date, or, Decolonizing the Anthropocene," *ACME: An International Journal for Critical Geographies* 16, no. 4 (2017): 761–80.
7 Bruce Braun, *The Intemperate Rainforest: Nature, Culture, and Power on Canada's West Coast* (Minneapolis: University of Minnesota Press, 2002); Gregory Simon, *Flame and Fortune in the American West: Urban Development, Environmental Change, and the Great Oakland Hills Fire* vol. 1 (Berkeley: University of California Press, 2016).
8 Candace Savage, *A Geography of Blood: Unearthing Memory from a Prairie Landscape* (Vancouver: Greystone Books, 2012).
9 Nicholas Blomley, "Law, Property, and the Geography of Violence: The Frontier, the Survey, and the Grid," *Annals of the Association of American Geographers* 93, no. 1 (2003): 121–41.

of colonial and capitalist control brought about a different set of anthropocenic relations, relations often (but not exclusively) articulated by the suppression of fire rather than the active use of it. As environmental historian Stephen Pyne notes, Canada's relationship with combustion moves from the wildland fire of forest, meadow, and wetland to that of the engine and industrial production.[10] Combustion of various sorts both gives life to Canada's economy and threatens its productivity as uncontrolled fires interrupt highways, tourism dollars, and potentially even extractive ventures in the heart of the very flammable Boreal forest of Canada.

Much of my work today focuses on how fire mangers in national parks attempt to "return" and "suppress" fire. These managers and ecologists, operating within a national network of personnel, must look to the past and into the future in order to get their work done. What I've learned from wildfire managers, and scholars interested in fire, is that fires are not contained events but happenings thousands of years in the making.[11] Given that fire has been excluded in some national park landscapes for over a century, managers must bring back fire themselves, articulating their nested vision of a fire regime. One way in which this is achieved is through prescribed fires, an orchestrated burn that attempts to achieve institutional goals of improving "ecological integrity" and, in some cases, through the manipulation of the landscape and fire regime to mitigate the risk of uncontrolled blazes in the future. In order to make these fires happen, they lean on a kind of memory work, whereby different sources of memories are used to inform actions, where memories of past fires prompt new ones.

Integrating Memories of Fire into Contemporary Management Practices

In their attempt to understand wildfire and its return, and even in its suppression, managers are informed by various attempts to remember what things used to be like. I use the word "remember" to encompass a set of practices for recalling the past. Fire managers are not necessarily attempting to envision a premodern nature when it comes to returning fire to national parks—there is a recognition that these landscapes are in flux—but instead their work is an attempt to piece memories and present circumstances together. They are

10 Stephen J. Pyne, *Awful Splendour: A Fire History of Canada* (Vancouver: UBC Press, 2011).
11 Natasha Myers, "Becoming Sensor in Sentient Worlds: A More-than-Natural History of a Black Oak Savannah," in *Between Matter and Method: Encounters in Anthropology and Art*, ed. Gretchen Bakke and Marina Peterson, 73–96 (New York: Bloomsbury, 2017), 73.

also very much aware that they cannot remember everything because the contemporary landscape is something that has been made as much by ecology as by culture. A national park, though a natural place, is a nature narrated by those that manage it.

This said, that narration is not absolutely human. Even though fire has been disrupted for a century or more in different national parks, memories of past fires and adaptations to fire are to be found in the landscape itself, positioning the landscape as a place with its own material memory to offer park staff. Fire managers and ecologists, often in concert with external scholars, piece together various forms of proxy data, where hints of former fires are literally burnt into landscapes, leaving behind a record of historical fire patterns. This is a practice of multispecies remembering, whereby different temporal rhythms, marked for example into the bodies of trees that survived past fires, help bring new futures into being.[12] This information is understood to be partial and incomplete, a memory, narrated in part by the species that endure, but managers are able to use it to consider how the encroachment of certain species, or the absence of others known to be fire-dependent and historically present, might inform not only the temporal rhythm of a fire regime but the location and breadth of past (and future) fires. Landscapes and bodies become what this issue is calling "sites of remembering"—sites composed of a cacophony of lively (and not-so-lively) beings, reminding us that the memories of fire are living on in the landscapes these managers are tasked with governing. It is a process that must both remember how landscapes are undone and how they can be remade, whereby the process of crafting a future is not solely a human affair.

In addition to the landscape itself, and the bodies that render it living, managers also look to their own memories, their "own" being the institutional archive of land management policies, practices, and personal memory. Policies and management plans may have been superseded by other initiatives over the decades, but they have still left their mark on landscapes, interrupting existing fire regimes or igniting new ones, and shaping the cycles of fire presence and fire's impact on particular places. For example, a suppression policy may allow some species to flourish while leaving others to die in the shade of an overgrown forest. Managers are well acquainted with the successes and failures of past fire management in the landscapes they come to govern and care

12 Laura A. Ogden, *Swamplife: People, Gators, and Mangroves Entangled in the Everglades* (Minneapolis: University of Minnesota Press, 2011).

for, and are not ignorant of institutional mistakes, though their ability and authority to manage landscapes differently makes working with fire an institutionally and ecologically complex task. At various stages of the fire prescription process, the impacts and echoes of past policies come to inform choices and approaches but also the ecologies with which they work; after all, many of the prescribed fires are perceived as signifying not the maintenance of a fire regime but the return of one.

Managers also rely on the memories of fires they have personally encountered. Through a series of techniques too complex to reiterate here, fire managers, ecologists, and fire crews come to interact with processes of combustion and vegetal life in ways that are informed by their past memories with other fires. Through the diversity of landscapes, these individuals come to interact with the nested diversity of species and geography particular to each burn site; their memories help inform but do not dictate their interaction with each new fire.

Thus, planning for prescribed fires means not only remembering the physical landscape, but the institutional landscape as well, prompting another understanding of where and what may constitute a site of remembering. Whether through the review of various policies, aerial photos of the parks that turn up in government archives, or even more recent reports of prescribed fires taking place throughout the park system, fire managers dig through these files, the institutional memory of these places, for clues as to how best to manage and "correct" fire presence in diverse ecosystems. These are moments of reflexive thinking—fire managers grapple with past relationships to fire as they work through the process of attempting to build new ones. This said, their work is constrained and interrupted by the fact that authority and jurisdiction over landscapes has been shattered into a mosaic of management agencies, each with its own nested approach to working with fire and flammable landscapes.

In some national parks, ecologists and fire managers have partnered with First Nations to bring back fire to landscapes and to integrate what managers refer to as Traditional Ecological Knowledge (TEK) into national park vegetation management and fire management plans. Here the memories and contemporary practices of others are used to help with decisions about future prescribed fires and other kinds of ecological management. It cannot be ignored that these memories are not always accessible or completely intact across the country, nor are all communities willing (nor are they obliged) to share

these memories with federal and provincial governments. Canada's assault on Indigenous knowledge, along with the historical expulsion of Indigenous people from many national park lands, has—in some cases violently—erased the possibility of these kinds of partnerships when it comes to fire management. Canada has been in the business of forgetting for some time, and it has cost everyone dearly.

These are still colonial landscapes—national parks—and like much of the colonial world, they are places where Indigenous relationships with landscapes have been actively excluded, or at the very least circumscribed, until quite recently. In Canada some fire-dependent ecosystems have flourished under the direction of Indigenous-led land practices. Practices of remembering expose the relationships that fires had with others before colonial bureaucracies moved in, and challenge current land managers of all kinds to build new relationships in the context of changing landscapes and changing climates. Fires in many Canadian contexts have been social affairs; ironically, it was the colonial quest to "manage" fire, which forgot the role it played in human societies, that has created some of the most "unnatural" landscapes in the country.

Where memory is available, and relationships can be built, fire managers with Parks Canada have been able to bring in yet another layer of memory through participation from neighboring Indigenous communities. These approaches to fire are more than operational, and from the perspective of those I have interviewed are about a kind of care that go beyond the kind of mandates Parks Canada is emboldened and constrained by. Memory is political, and fire is an opportunity for fire managers to remember differently, to consider how fire might be an opportunity to build not only new relationships with the planet, but with people who have been excluded from land management processes.[13]

Igniting new directions

Setting fires, at its core, is about building new relationships with landscapes. Though fire managers remain constrained by institutional borders, contradictory mandates, and a violent colonial past and present, the return of fire is about remembering pasts and

13 Emilie Cameron reminds us that remembering differently in settler-colonial Canada is a political act; Emilie Cameron, *Far off Metal River: Inuit Lands, Settler Stories, and the Making of the Contemporary Arctic* (Vancouver: University of British Columbia Press, 2015).

igniting new futures. By virtue of the changing set of relationships between people, policies, and landscapes, memory work must be coupled with "imagining work," answering countless calls for us to see the Anthropocene as an opportunity to become otherwise than we are now.[14] National park fire managers and ecologists are grappling with how fire will fit into wider processes and challenges and, through a kind of diplomacy, they are making the case for fire in landscapes where fire may be resisted. They are compelled to come up with approaches and tactics that bring back fire in a way that does not disrupt other park mandates or rub neighboring landholders up the wrong way, while also rewriting national park narratives of a human-less wilderness with a more honest portrayal of human-environment relations. There is still a great deal of work to do and many memories to consider.

14 Haraway, *Staying with the Trouble*. See also Myers, "Becoming Sensor," 73.

Annette A. LaRocco

Memory as Claim-making in Kalahari Socio-environments

The San people of the Kalahari are the indigenous inhabitants of Botswana. Beginning in the 1990s, in response to both domestic politics and the burgeoning transnational indigenous peoples movement, many San began to explicitly organize themselves along these lines. While articulating themselves as the "first people," they remain significantly marginalized in terms of national political representation and are generally absent from policymaking circles. Inhabiting a rural region with large wildlife populations and substantial protected areas, this exclusion often plays out in relation to environmental and conservation policy. Informed by 12 months of qualitative fieldwork, this paper examines the use of memory as a form of claim-making among Botswana's San people, a tactic by which they contest their marginal position with regard to environmental policymaking and within the Botswana state, writ large. The community's collective invocation of generations of environmental stewardship is deployed as a means of opposing state conservation policies, including the hunting ban and forced removals from wildlife areas. By using histories of sustainable resource use, they articulate their belief that the local environment is not threatened by their presence, but rather protected through generations of human-environment interactions. San respondents argue that their communities are holders of knowledge that is both legitimate and valuable to the effective management of the nation's resources.

San Environmental Concerns in Western Botswana

Botswana's national census does not collect data on ethnicity, making exact figures hard to come by, but estimates suggest the San make up about three percent of the total population of Botswana, somewhere around fifty thousand people.[1] However, they are thought to account for somewhere between 40 to 50 percent of the population in one of Botswana's westernmost regions, Ghanzi District. This district is noteworthy because

1 Robert Hitchcock, Maria Sapignoli, and Wayne Babchuk, "What About Our Rights? Settlements, Subsistence, and Livelihood Security among Central Kalahari San and Bakgalagadi," *The International Journal of Human Rights* 15, no. 1 (2001): 62–88.

67 percent of its land is zoned for wildlife, including the single largest reserve in the country, the Central Kalahari Game Reserve, or CKGR.[2]

There are two broad types of environmental and conservation policies that are points of contestation between San communities in western Botswana and the central state. The first are the restrictions placed on wildlife products such as ostrich eggshells (used in traditional beading), gathered food products, and most recently, the national hunting ban prohibiting all consumption of wildlife for either subsistence or commercial purposes. The second environmental policy that causes deep friction between San people and the Botswana state is that of forced removals from areas demarcated as conservation zones, the most notable of which is the series of evictions from the CKGR. Both of these suites of policies have elicited broad and sustained critiques from San communities, which tend to contest this kind of environmental decision making as discriminatory and ahistorical. A prime mechanism by which these groups articulate their perceived rights to land and natural resources is through the deployment of collective historical memory, and the invocation of their community's historical stewardship of the environment.

Memory and Resource-Use Restrictions

In recent years the Botswana state has instituted a series of restrictions with regard to the use of wild plants and animals, often in the name of conservation. Members of the San community, while currently settled in villages and employing a wide variety of livelihood strategies, have a history of hunting and gathering. The use of wildlife products has remained an important source of subsistence, as well as retaining cultural significance, well into the twenty-first century. In light of this, as resource-use rights have been hemmed in over the last 20 years, San peoples have contested these shifts in environmental policy by deploying memories of sustainable resource use as evidence of their community's good stewardship. A man in a resettlement village in Ghanzi District stated:

2 Chasca Twyman, "Rethinking Community Resource Management: Managing Resources or Managing People in Western Botswana?" *Third World Quarterly* 19, no. 4 (1998): 745–70.

> Historically, and naturally so, we the Basarwa [San] have been living off wild animals but they have not been wiped away. Look, our forefathers having [sic] been consuming these animals but we our generation has found them and so will future generations even if hunting was to continue.[3]

The man's claim argues that his community is a unique wellspring of deeply held knowledge that is vital for the enactment of conservation policy. Similarly, as a well-known San activist implored, "Go and talk about an eland and see who knows more? An old woman or a biologist."[4] By appealing to memories of local history and knowledge, this discourse attempts to weaken the state's unequivocal claim over the authority to enact restrictive conservation policies. By directly comparing an old woman to a biologist, the activist is repudiating the dominance of "scientific fact" in conservation policy and making a claim to authority based not on education or technical expertise, but rather one rooted in a historical and contemporary proximity to wildlife, cultural regard for the environment, and the community's history as knowledgeable stewards of the ecosystem.

Beyond simply asserting that contemporary coexistence with wildlife indicates a historical stewardship of conservation areas, respondents used memories about the past distribution of wildlife across the country to discredit the environmental decision-making authority of the state. An exchange with an older man from the village of New Xade is illuminating in this regard:

> *Interviewee:* When I was a young man, before we were removed from Central [the CKGR], there were many animals. We didn't finish the animals, because we know better. Our fathers and grandfathers taught us how to hunt the animals and not to finish them. But then Bakwena and Bangwaketse [Tswana-speaking groups] came to the Central [CKGR] and made us their slaves and began to finish our animals.
> *Author:* Why did Bakwena and Bangwaketse come from their lands to the CKGR?
> *Interviewee:* Why, because they had finished all their animals! There were no animals left in their lands! The Tswana killed off their animals and then came to take ours. Now the government says the animals belong to the government and to the lekgoa [white people, meaning tourists]. But the only animals left are ours.[5]

3 Interview with local resident (XK), 28 February 2014, Qabo, Botswana.
4 Interview with San activist (JG), 4 March 2014, New Xade, Botswana.
5 Interview with local resident (XQ), 4 March 2014, New Xade, Botswana.

The deployment of these memories is an attempt to weaken the state's absolute claim over the authority to enact conservation restrictions, by appealing to a historical memory perceived as missing from mainstream discourses. These rhetorical imaginaries of resistance utilize their contemporary proximity to wildlife to argue that they, conservation-adjacent communities, are better suited to determining how resources are used than decision makers in the far-off urban capital city.[6] By highlighting the failure of "Tswana-speaking people" (a euphemism for government decision makers) to protect and maintain their own local biodiversity, the respondent is criticizing mainstream society for their loss of wildlife—the same mainstream society now demanding restrictions in the name of conservation. This is a memory-based claim of environmental expertise. This man, like many others, suggested that the continued existence of wildlife in San-dominated areas was due to their long-term attention to conservation as a cultural norm. From this perspective, those state agents dictating national conservation policy—in their eyes, the "Tswana-speaking people"—had been derelict in their own environmental stewardship, yet now set the terms of national resource management. This is viewed by interviewees in conservation areas as not only counterintuitive but also dismissive of their memorialized good practices.

Memory and Land

The establishment of all of Botswana's protected areas required the eviction of people. The most noteworthy instance of a conservation-related removal occurred in the Central Kalahari Game Reserve. The eviction took place fully under the postcolonial government and was the impetus for the longest legal battle in Botswana's history. When the CKGR was first established, its function was to provide a haven for human practices of hunting and gathering as well as for wildlife. When the reserve was officially demarcated in 1961 there were around 4,000 people living inside its borders. By the mid-1980s, the number of residents still in the CKGR was about 1,300. From 1986 to 1997, state authorities exerted indirect pressures to incentivize out-migration, such as freezing development, neglecting existing infrastructure, and hobbling service delivery mechanisms. By 1997 the government had cut off services to park dwellers, and most residents were moved to resettlement villages outside of the park. Another round

6 Interview with village kgosana (MM), 25 November 2013, Boro, Botswana.

of removals occurred in 2001, and in early 2002 borehole wells were sealed permanently, making continued residence difficult.[7]

Though a detailed analysis of the CKGR controversy is beyond the scope of this paper, the incident galvanized San communities in unexpected ways. The CKGR became a potent symbol of San territorial claims to wildlife areas, and is often the focal point of deployment of historical memories in the contestation of land ownership. San territoriality and land-tenure systems are deeply complex but nearly entirely overlooked by state institutions. This misreading of San land-use systems led to their areas being viewed as vacant and ripe for categorization as a wilderness space devoid of people. However, historically San territoriality was not limited to their place of occupation at any given moment, but included the larger swathe of land around which they seasonally migrated. Derived from this historical memory, contemporary San communities have much more expansive notions of territory than the current political cartography suggests. An extensive community-mapping program inside the CKGR illustrated San territoriality that conventional maps fail to capture. Inside the reserve, practitioners worked with former and current residents to account for the details left out of most cartographical exercises, by using both remembered personal experience as well as oral histories. One of the consultants working on the community-mapping program said:

> [Residents of the CKGR] have got very complex territorial structures over vast areas. They've got hundreds of named units of land and they have very detailed knowledge of each of those areas. They [state authorities] see Molapo [a community inside CKGR] as a dot on the map, and until all this work was done the department never actually realized that, well that's just the point that the department knows and that all of the surrounding areas is very much [part of the territory].[8]

This brings to the fore the ways in which local memories of place, historical expanses of territory, and ownership patterns are often lost in technocratic exercises of delineation and boundary-crafting, especially with regard to protected areas. Through community-mapping exercises and the deployment of little-known San place names, members of this community attempt to reclaim space from which they have been evicted. These

7 Manuela Zips-Mairitsch, *Lost Lands? (Land) Rights of the San in Botswana and the Legal Concept of Indigeneity in Africa* (Berlin: Lit Verlag, 2013).
8 Interview with conservation practitioner (AA). 8 February 2014, Maun, Botswana.

efforts to reinscribe San historical occupancy across land now zoned as "people free" are memory made material. This claim argues that the continued existence of rich biodiversity in this region is possible because of the co-presence of human communities, not despite it. The memories of movement, rotation, and seasonally-appropriate environmental knowledge articulated in mapping processes contest the unanimity with which the state lays claim to environmental knowledge.

Key Insights

This brief discussion of a complex case can provide some overarching insights into the role of memory in environmental policymaking. It urges policymakers to recognize the plurality and polyvalent nature of memory, and the potential for memory to be deployed as a mode of contestation by marginalized communities. This highlights the need to conceptualize alternative narratives and varied modes for collating a diverse historical accounting of memory, including the use of oral history and participatory community mapping.

Reactions to Changing Landscapes

Chris Bolton

Landscape and Change in Policy: Understanding Cultural Values

Memory is a cultural value, formed in part by people's experiences in landscapes. The importance of memory for a full understanding of a cultural landscape is addressed by many of the contributors to this volume. For those involved in influencing policy decisions directly, finding ways to incorporate public opinions into the management of ecological sites can be both challenging and rewarding. In this case study from Natural England, I explore ways that we have tried to work with local partners to create landscape management plans that draw on the local community and their relationship to place.

Policy Context and Rationale

Natural England has a statutory role to promote nature conservation by protecting biodiversity, conserving and enhancing the landscape, promoting access to the countryside and open spaces, encouraging open air recreation, and contributing in other ways to the social and economic well-being of the nation. It also now plays a part in implementing the UK Government's 25-year plan for the natural environment, *A Green Future*,[1] which sets the scene for Natural England's forward-looking conservation strategy, *Conservation 21*.[2] These strategies not only place an emphasis on working at a local level with partners, and joining up large-scale approaches to landscape and wildlife conservation, they also have the potential to reshape our future landscapes—and the public need to be able to influence change and how it is managed. Therefore, a better understanding is required of how people value the natural environment and the benefits they desire from landscape.

The broad underlying hypothesis is that public support for ecologically motivated and/or other types of landscape change will become more sustainable and acceptable where the public's cultural values and the cultural ecosystem services (CES) they benefit from are fully recognized, acknowledged, and integrated into the planning and design of pro-

1 Defra, *Green Future: Our 25 Year Plan to Improve the Environment* (Defra: London, 2018).
2 Natural England, *Conservation 21: Natural England's Conservation Strategy for the 21st Century*, NE642 (Natural England, 2016).

posals at the outset. The benefits of this approach are manifold: people feel that their beliefs and opinions about local landscapes are taken seriously, and they have the opportunity to participate in landscape management. This can lead to a greater sense of community and cohesion. Recognizing the cultural significance of the landscape can also result in improved designs, which might include "signals" of past events that need to be perpetuated in social memory. Embedding cultural memory in landscape management plans argues for the significance of landscapes as sites of remembering, as well as in terms of their ecological or aesthetic significance.[3]

The rationale for incorporating cultural values lies in delivering landscape and cultural services through ecological network ("econet") design, planning, and implementation. Econets will in turn support sustainable development by encouraging connectivity and biodiversity conservation, human well-being, and cultural-natural resilience.[4]

Approach and Methods

An initial study titled *Econets, Landscape, and People* implemented a few small-scale pilot projects to test whether it was possible to capture spatially organized data about people's cultural values—for example, in the context of a potential ecological network in Bedfordshire's Greensand Ridge Nature Improvement Area.[5] Using on-site questionnaires and mapping the findings obtained from these, the researchers showed that local participants could identify the highs and lows of cultural service delivery in geographic areas of different scales—and could separately identify the individual cultural services, such as inspiration, beauty, tranquility, and the presence of wildlife. Specifically, the public could locate these services spatially on paper maps.

Subsequently, research in the Morecambe Bay area of northwest England piloted practical tools and advice as to how cultural service information gathered from the public

3 Conversely, there are a series of potential risks from not building public perceptions into the design stage of econets, including: resistance to the design or its implementation; eventual failure of the econet through a lack of commitment and resources from local people (econets are not sustainable without their involvement); cultural alienation, leading to a decline in use of the landscape by local people and a loss of local identity; missed opportunities for education or recreation; and potential problems arising from actual or perceived negative aspects of the econet.

4 Paul Selman, *Sustainable Landscape Planning; The Reconnection Agenda* (London: Routledge, 2012).

5 H. Inwood, A. Fleming, G. Pungetti, P. Selman, R. Jongman, R. Rackham, and J. Makhzoumi, *Econets, Landscape, and People*, NECR180 (Natural England, 2015).

could be used alongside natural environmental data for the benefit of econet design and other landscape-change proposals. Three landscape focus areas were selected to provide the opportunity for going beyond current understanding by explicitly bringing together public perceptions data and natural science data in a mapped (GIS) form. The aim was that this integrated social and natural science evidence would form the basis for a demonstration of how such outputs could practically inform, guide, and influence future landscape-change policy and plans. The three chosen focus areas were:

- The Duddon Valley—to look at landscape change in the form of woodland planting;
- The Arnside and Silverdale Area of Natural Beauty (AONB)—helpful from a forward or development planning perspective and the relationship with wider green infrastructure and econet opportunities;
- The Lancaster/Morecambe/Heysham triangle—to look at urban and coastal fringe issues.

In each focus area, an extended participatory workshop was held with members of the public. Participants were invited beforehand to use one of two tools developed for the study for capturing their experiences of the landscape and for geolocating these "cultural services"—a participatory GIS tool (PGIS) and a smartphone landscape app. The PGIS tool operates as an interactive website that can be remotely accessed by the public; for example, in advance of participatory mapping sessions or (to extend the reach of sessions) by providing a means of capturing perceptions of other members of the public. The tool also captures simple information about the user, including respondent demographic profile details (age, gender, home postcode), the frequency and purpose of their outdoor visits, and their affiliations (e.g., memberships of wildlife organizations).

A series of zoomable maps is provided on which people can place digital pins that denote locations where they experience cultural services (leisure, solitude, tranquility etc.). People are able to place as many pins as they want within the map area. Ordnance Survey maps and satellite views of the area provide the background for this activity and also provide geographic context when capturing sites of interest on the map. Both maps and satellite are on a zoomable scale, so that people can identify both a detailed location or a more "fuzzy" general locality. In addition to placing pins on the PGIS map, people are able to write free text against the cultural service locations.

The website also provided the ability to upload pictures that users may have taken of the place of interest.

The cultural services examined in the tool comprised an agreed set of five themes:

- active outdoor recreation (walking, cycling, etc.);
- local history, heritage, and learning;
- solitude, calm, and tranquility;
- beauty and inspiration;
- wildlife and nature.

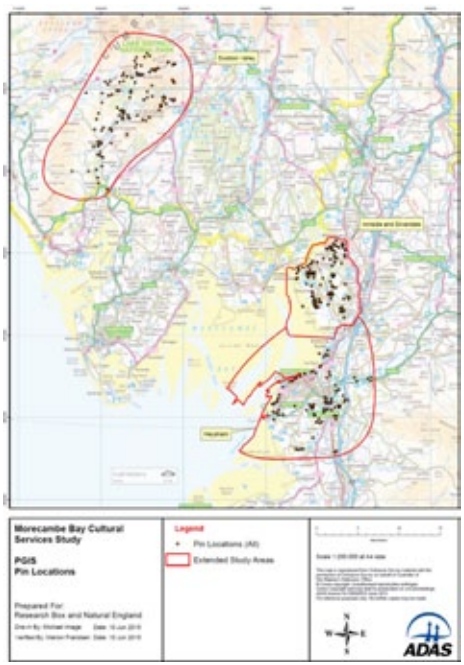

Figure 1: Morecambe Bay study PGIS pin locations. Source: H. Inwood, A. Fleming, M. Frandsen, H. Davies, M. Image, *Incorporating cultural values and services in landscape and ecological planning*; (Natural England: 2015)

The pilot study provided a total of 385 pins eligible for statistical and spatial analysis, placed by 46 users. A map of the pin locations in the three focus areas is shown in figure 1. Analysis of the PGIS data has revealed that the five cultural service themes listed above are enjoyed more in certain land-cover types. For example, of the 14% of overall pins that were allocated to "wildlife and nature," the proportion is noticeably higher for heather grassland (at 38%) and neutral grassland (20%) compared to other land-cover types. At the other end of the scale, and perhaps unsurprisingly, only 7% of pins in urban land cover were assigned to "wildlife and nature." Interestingly, a higher proportion of pins (17%) placed in broadleaf woodland were attributable to "wildlife and nature" compared with just 8% of pins in coniferous woodland. This suggests that quite subtle relationships between biodiversity and habitat type are recognized by the general public.

A number of separate environmental GIS datasets were mapped to identify their relationship with the users' pin locations. Datasets showing statistically significant positive correlation (at the 5% level) with pin location (i.e., those for which far more pins were placed than would be predicted by their surface area if all pins were placed randomly) are shown at the top of figure 2 (up to and including RSPB Reserve). Datasets for which far fewer pins were placed than would be expected (significant at the 5% level) are shown at the bottom (National Park onwards).

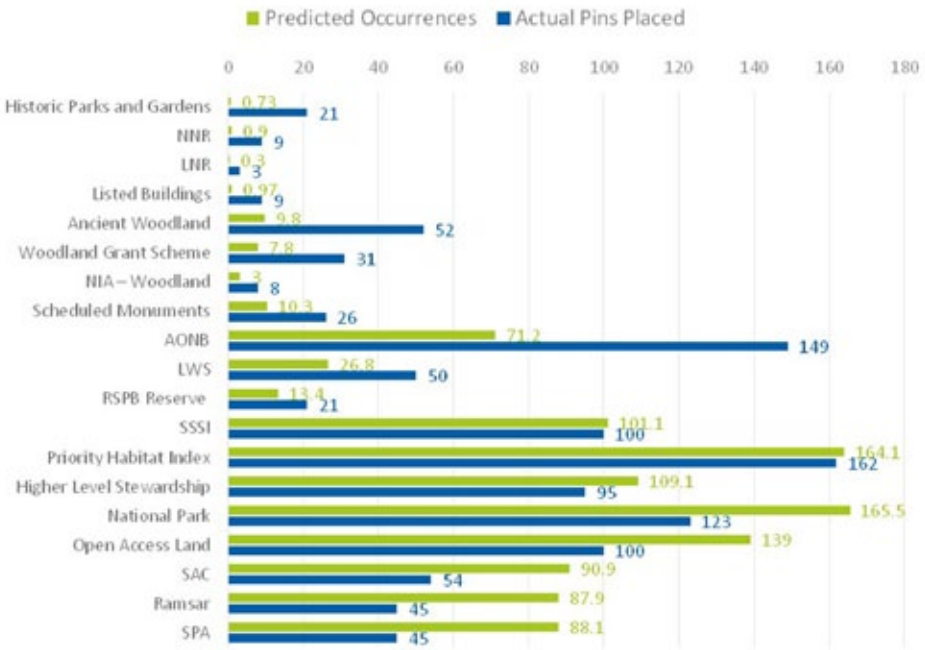

Figure 2: Predicted occurrences of PGIS pins compared to their actual presence in the focus areas. Source: H. Inwood, A. Fleming, M. Frandsen, H. Davies, M. Image, *Incorporating Cultural Values and Services in Landscape and Ecological Planning*; (Natural England: 2015)

Combining cultural and natural environment data is complicated by the fact that the latter are commonly associated with physical features on the ground, whereas the cultural values that people place on a particular landscape could also be influenced by family tradition, local history, memories, sounds, or smells, etc. and have generally not been considered by e.g. ecologists and landscape planners. This study has therefore sought to assign the cultural data spatially, at a similar scale and functional unit to the natural environment data. Given that respondents used pins to identify the locations where they experience cultural ecosystem services in the landscape,

this data has been integrated into a GIS environment as point data. The GIS tool then allows for the spatial integration and analysis of this information with other natural environment datasets. There is a strong correlation between CES benefits and certain specific natural and built environment data layers (land-cover types, environmental designations, or land under conservation management). People who took part in this study find particular importance or value in areas of land and/or designations relating to woodland (particularly ancient woodland), nature reserves, historic parks and gardens, listed buildings, scheduled monuments, and designated Areas of Outstanding Natural Beauty.

Some Key Findings and Conclusions

The spatial analysis revealed that there are a number of geographic areas or specific locations in the Heysham area that provide people with CES benefits that are not reflected through any environmental designation or land under conservation management. Without statutory or non-statutory protection, these special areas are more likely to undergo a change in land cover or land use (e.g., through development) that could reduce the CES benefits these areas can provide, potentially to the extent that their value is destroyed.

In particular, there are places that people find important for their beauty, tranquility, local history, and recreation benefits. In order to factor such areas into local decision making, it may be necessary for local authorities to add a CES evidence layer to their GIS database. It could then be used in much the same way as the other GIS data layers a local authority holds, for consideration in strategic-level planning and development management decisions.

The areas providing CES benefits would not necessarily have the same level of protection as formal designated sites, but should nevertheless be considered during decision making. Having a GIS layer for CES benefits presented alongside other GIS layers used in decision making would make its incorporation into land-use planning decisions feasible and transparent.

The study has shown that people can use web-based tools or smartphone apps in order to identify places that are important, or special, to them. And they can identify why these places are special—whether this is for recreation, or because they experience inspiration, beauty, tranquility or a sense of history at these places.

Many of the findings have shown that people's special locations are correlated with certain types of land cover—broadleaf woodland, for example, which echoes previous research that has shown the importance of woodland for tranquility and beauty.[6] In this research, the importance of broadleaf woodland for wildlife and nature has also been evident. The previously reported differences between broadleaf and coniferous woodland in generating CES has also been graphically shown in the findings—three times as many pins were placed in broadleaf woodland. There is also evidence from this study that confirms the importance of water as a generator of cultural services, particularly for delivering tranquility.

The PGIS is a versatile tool for gathering qualitative, spatial data on people's values associated with the landscape; however, it is an approach that requires active promotion to attract high levels of public participation and to include a representative sample of the population. Natural England continues to test the approach across a range of rural and urban landscapes, including areas of multiple deprivation. The systematic gathering of "hard" spatial evidence about people's values, including their memories and associations with places, has potential for informing a range of change scenarios. This includes building the evidence base in the context of disaster management—with the need to conserve and enhance those valued landscapes and features that help people understand how landscapes evolve and to help perpetuate memories of significant past events.

6 H. Inwood, A. Fleming, L. Cole, and R. Minter, *Experiencing Landscapes: Capturing the Cultural Services and Experiential Qualities of Landscape*, NECR024 (Natural England,2009); H. Inwood, A. Fleming, L. Cole, and R. Minter, *Experiencing Landscapes: Towards a Judgement-making Framework for Cultural Services and Experiential Qualities*, NECR04 (Natural England, 2011).

Craig E. Colten and Audrey M. Grismore

Can Public Policy Perpetuate the Memory of Disasters?

The Amite River flood in August 2016 caught many residents unawares. Rains hammered the Baton Rouge, Louisiana (USA) area for a couple of days and totals exceeded 50 centimeters in much of the small river basin. But heavy rain is nothing unusual in this place, nor are floods. Yet, the rain came so fast and for sufficient duration that floodwaters rose to record levels, creeping into houses across East Baton Rouge Parish as their occupants slept. At one gauge the river rose to over 12 meters, over 1.5 meters above the 1983 peak and more than 6 meters above the "flood stage." This produced unprecedented flooding across much of the lower basin.

According to Neil Adger and colleagues, the memory of prior events helps society prepare for and cope with successive trauma.[1] Likewise, Lindsey McEwen and collaborators have written extensively about the critical importance of sustaining flood memories as a basis for a resilient society.[2] But, how well do we hold on to the lessons learned, how effectively do we insert memories of tragedy into public policy? The Amite River Basin provides a troubling view into the disjunction between local flood memories and their infusion into effective urban planning and development.

The disaster that unfolded from exceptional rainfall in this tiny basin was not unexpected. In fact, an event of this sort was predicted in 1985. The 2016 flood and the long-slow slog of recovery mirrors the previous record flood in 1983, and reminded residents of serious floods in 1953, 1977, 1979, 1993, 1990, and 2001 (figure 1). Indeed, the river had flooded in March just five months earlier in the same year! Following each of these previous tragedies, residents endured the turmoil of a protracted recovery.

The typical tabulation of disasters includes fatalities, numbers of properties damaged, and dollars of damage. In 1983, damage totals topped $171 million with more than 5,300 houses damaged. In 2016, those numbers soared to $8.7 billion in damages, with over

1 W. Neil Adger, Terry P. Hughes, Carl Folke, Stephen R. Carpenter, and Johan Rockstrom, "Social-Ecological Resilience to Coastal Disasters," *Science* 308, no. 5737 (2005): 1036–39. Craig E. Colten and Amy Sumpter, "Social Memory and Resilience in New Orleans," *Natural Hazards* 48, no. 3 (2009): 355–64.

2 Joanne Garde-Hansen, Lindsey McEwen, Andrew Holmes, and Owain Jones, "Sustainable Flood Memory: Remembering as Resilience," *Memory Studies* 10, no. 4 (2017): 384–405, see 390.

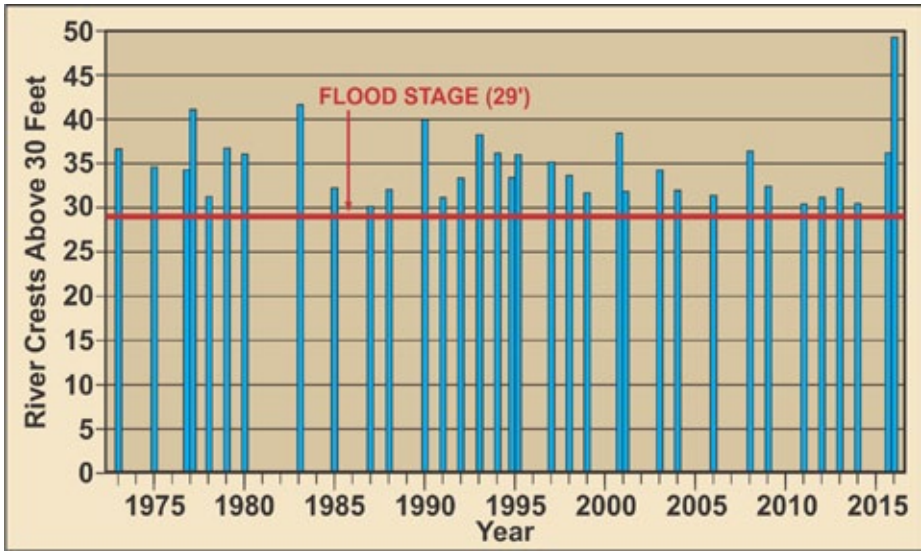

Figure 1: Amite River crests above flood stage since 1973. Graphic by Mary Lee Eggart.

92,000 houses flooded.[3] What these totals do not account for is the stress and strain on entire communities—the difficulties faced by members of impacted families as they restructure their everyday lives to accommodate both normal routines and the labors and frustrations of rebuilding, all as the normally supportive networks of friends and family are scattered. These deeply personal human burdens are the unmeasured costs of disaster. And, consequently they are often forgotten in the rush to rebuild and amidst the pressure to restart the economy, and lost in the proclamations of fortitude and perseverance—resilience distorted to mean defiance. The very real consideration that such an event could return is quickly set aside. Thus, local officials neglect future safety in the haste to rebuild bigger and better. Without perpetuating memories of tragedy and prioritizing safety, the risk of future suffering and turmoil, the untabulated cost, remains a reality.

There is often a stark disjunction between local memories of floods and the long recovery process, and the rapid decision making in the wake of disaster. When the waters rose in East Baton Rouge Parish in August 2016, there was a substantial legacy of planning for floods, but inadequate follow-through on many of the sensible proposals. How

3 Dek Terrell, *The Economic Impact of the August 2016 Floods on the State of Louisiana* (Baton Rouge: Louisiana Economic Development, 2016). The 2016 tabulation includes other river basins impacted by the same storm system.

do we employ social memory to perpetuate lessons that sustain a society's ability to cope with extreme events without repeating its mistakes and leading to repetitive suffering and costly recoveries? Some have spoken to this point in the past.

Two years after the prior record-setting disaster, a local floodplain expert, Rod Emmer, wrote a prophetic essay for his professional association. He argued that "flood damages are attributable to a lack of planning."[4] Emmer pointed to a report prepared by the local planning commission months before the 1983 flood that cautioned, "Prevention of the development of residential subdivisions . . . in areas subject to inundation should be a primary consideration in determining which vacant lands should be earmarked for future residential use."[5] He lamented that decision makers had failed to implement such recommendations.

For most of the region's settlement history since the 1700s, development avoided the riskiest areas and previous floods were inconsequential. By 1965, public officials recognized that flood damages were a growing problem. But some among them held the belief that flood risks were devaluing existing properties and impeding development; "Normal growth is being retarded in some of the most desirable housing areas and many potential industrial sites are unusable because they are located in floodplains." Indeed, a public report suggests that the erosion of property values that were kept off the market due to flood risks eclipsed the monetary costs of flood damages.[6] Such attitudes acknowledge past floods, but take the position that flood control can eliminate risk. At that time, few people had direct memories of the miseries of inundation.

This attitude contributed to dueling public policy positions: floodplain avoidance versus structures protecting the interests of aggressive development. By 1979, a severe flood prompted a journalist to write that "many areas that 10 years ago were woods and swampy are now subdivisions and shopping centers."[7] The tradition of floodplain avoid-

4 Rod Emmer, "The Disaster That Doesn't Have to Happen: The Baton Rouge Flood of 2001," in *Proceedings of the Annual Meeting of the Association of State Floodplain Managers* (New Orleans, LA: ASFPM, 1985), 131–45, quote at 132, http://65.182.2.246/docum/crid/Marzo2006/CD2/pdf/eng/doc10039/doc10039-a.pdf

5 Emmer, "The Flood that Doesn't Have to Happen," 132; and East Baton Rouge Parish, Planning Commission, "Preliminary Report to EBR City-Parish Planning Commission," *Land Use Development Study, Eastern Sector* (Baton Rouge, LA: 1983).

6 Switzer and Assoc., *East Baton Rouge Parish Water Conservation, Recreation, and Flood Control Program* (Baton Rouge, LA: 1965), 1.

7 "Baton Rouge Area Flooded," *New Orleans Times-Picayune*, 24 April 1979, 1 & 7, quote at 7.

ance was on the wane. On the eve of the 1983 flood, the local planning commission displayed its ambivalence. It reported that 10 subdivisions developed since the 1977 flood were in the footprint of that inundation.[8] Yet, it pointed out that "emphasis should be placed on non-development in flood plains, until regulations are enacted to deter such development."[9] A statewide study assessing flood mitigation strategies recommended "protecting existing developments in flood-prone areas without encouraging further development in those areas."[10]

Shortly after the record 1983 flood, Emmer voiced his criticism of tolerance for development in inappropriate places. Recent suburban sprawl reflected a disregard for the fast-accumulating flood memories. A second local flood-expert observed that of the 33 residential developments built in Baton Rouge between 1970 and 1984, 29 had been affected by floods. She also asserted that the city had "flood amnesia"—relying on politically popular structural solutions, regardless of their effectiveness, over land-use approaches.[11] A 1987 statewide flood management study acknowledged that floodplain development near Baton Rouge was placing residences in risky locations and concluded that "it may become necessary for parish and municipal governments to regulate development located within flood-prone areas in order to prevent further escalation of flood damages in Louisiana."[12]

There were no incentives to prioritize safety over economic development. Subsequent reports reiterate this amnesia, which contributed to perpetual flood impacts.[13]

Local observers were fully aware that sprawling urban landscapes contributed to the spiraling number of flood-damaged properties. The urge to accommodate sprawl was driven by four key factors: absolute population growth that drove demand for suburban housing, lower-priced real estate in the Amite Basin, white flight from Baton Rouge, and new highways. Between 1970 and 2010, the population soared in those suburban devel-

8 East Baton Rouge Planning Commission, *Land Use Development Study*, 39.
9 East Baton Rouge Planning Commission, 18.
10 Flood Control Project Evaluation Committee, Louisiana Legislative Committee on Transportation, Highways and Public Works, *Louisiana Statewide Flood Control Program* (Baton Rouge, LA: 1985), 1–2.
11 Mike Dunne, "EBR has Flood Eggs in Structures Basket," *Baton Rouge Advocate*, 5 April, 1987, 12A.
12 Mike Dunne, "BR Area Has 2nd-Worst Flooding Problem in Louisiana," *Baton Rouge Advocate*, 2 March 1987, 1A.
13 Governor's Interagency Task Force on Flood Protection and Mitigation, *Final Report* (Baton Rouge: State of Louisiana, 1990), see 22–23; and Amite River Basin Drainage and Water Conservation District, *Amite River Basin Floodplain Management Plan* (Baton Rouge: 2015), esp. ch. 4.

A small convenience grocery and tamale shop in Ascension Parish was among many businesses that endured high water and the damage that accompanies it. (Photo by author)

opments that hug the banks of the lower Amite River. Housing prices rose in the city and suburban properties had lower price tags. Tensions over school desegregation played a prominent role in the selective movement to suburban locations.[14] The new Interstate Highway system offered efficient commutes into the capital city.

Baton Rouge pushed eastward from its high ground along the Mississippi River, downward towards the Amite, and urban landscapes replaced over 56,000 acres of pasture and forest (24,500 to 81,400 acres) between 1956 and 1979.[15] In its 1991 plan, the city parish noted that about 45 percent of the parish was in the 100-year floodplain.[16] Along the smaller Comite River, development had reached 35 percent of the total land area. Floodplain encroachment was most notable in the small tributaries where development typically exceeded 75 percent of the land area.[17] Consequently, the minor tributaries flooded frequently.

14 Carl L. Bankston III and Stephen J. Caldas, A *Troubled Dream: The Promise and Failure of School Desegregation in Louisiana* (Nashville, TN: Vanderbilt University Press, 2002).
15 Emmer, "The Flood that Didn't Have to Happen," 131.
16 City of Baton Rouge, Parish of East Baton Rouge, *Horizon: Citizens Planning the Future, Conservation and Environmental Resources Element* (Baton Rouge, LA: 1991), 11.
17 Parish of East Baton Rouge, 95.

Homeowners in Denham Springs place their damaged household goods on the curb for garbage removal. This town is bordered by the Amite River and has been inundated numerous times in recent decades. (Photo by author)

East Baton Rouge entered the National Flood Insurance Program in 1979 and since then officials have mapped flood risk and enacted public policies in accord with the federal program. The standard for requiring flood insurance is based on the 100-year flood zone, yet FEMA also noted that the 500-year flood zone was also subject to inundation. The choice of the lesser standard by the federal flood program enabled communities to permit development in risky areas without denying citizens access to the subsidized insurance. Consequently, the city parish has taken steps to conform to FEMA standards. East Baton Rouge Parish, through its flood mitigation efforts, has earned a Community Rating Score, which entitles residents to a 15 percent discount on flood insurance.[18]

Over time, the city has adjusted its policies to acknowledge flood risk. Since 1973, policies have placed the burden on developers and focused primarily on individual developments, rather than basin-wide strategies, while also seeking to meet FEMA's flood insurance thresholds. A notable change took place in 1993, when the city required new construction to be built two feet above the base flood elevation.[19] This revised ordinance

18 As of October 2016, East Baton Rouge Parish had a Community Rating System score of 7. FEMA, Community Rating System (CRS) Communities and their Classes—October 2016, https://www.fema.gov/media-library-data/1476294162726-4795edc7fe5cde0c997bc4389d1265bd/CRS_List_of_Communites_10_01_2016.pdf (accessed March 2018).

19 Amite River Basin Drainage and Water Conservation District, *Amite River Flood Control Program* (Baton Rouge, LA: 1995), 10.

provided significantly higher levels of protection for new homes, but it did not apply to existing structures, nor did it address the larger issue of basin-wide runoff produced by multiple subdivisions. Consequently, sprawl continued, runoff increased, and the number of homes at risk proliferated.

A clear consequence of intrusions into risky areas is the number of repeat flood insurance claims. Studies since the 1990s show a high incidence of repeat flood damage claims.[20] Highlighting the compulsion to permit expansion and long-term residence in risky areas, one of the newer communities in the parish, Central, which straddles a modest rise between the Amite River and its main tributary, the Comite, has some 75 percent of its municipal territory in the 100-year floodplain.[21] Much of that land had been deliberately developed between 1983 and 2016, and nine thousand homes suffered flood damage in 2016.[22]

The Amite River Basin authority has advocated a blend of structural and land-use approaches to flood protection. A central plank of the regional approach since the 1983 flood has been to build a diversion on the Comite River that would reroute a sizable quantity of water into the Mississippi River and thereby reduce the flood stage in the lower Amite. This project has enjoyed considerable local support, and even gained voter approval for a tax to pay for a portion of its construction. Yet, it has languished for a variety of reasons and remains incomplete. Since 2016, local government officials have demanded swift action on funding the project. Funding was finally approved in mid-2018. Even though the river basin organization has recommended stronger development controls, zoning and regulatory authority rests with individual parishes, which tend to favor development and increasing tax bases.[23] The incentive to control development is largely absent, even if the memory of tragedy persists.

20 Governor's Interagency Task Force, *Final Report*, 12–13; and City of Baton Rouge and Parish of East Baton Rouge, *A Comprehensive Study of the June 1989 Flood* (Baton Rouge, LA: Department of Public Works, 1990), 12.

21 Center for Hazards Assessment, Response and Technology (CHART), *Repetitive Loss Area Analysis #9: City of Baton Rouge Area, Greenwell Springs Area* (New Orleans, LA: University of New Orleans/Chart, 2009); City of Central, "Is My Property Included in the LOMR Effective"? 15 July 2016, http://www.centralgov.com/maps-and-information/fema-flood-zone-maps.html#.WEWJFn2ulZQ (accessed December 2016).

22 Emily Holden, "Louisiana Flood: 'Ignored and Screwed,' This Town Aims to Ease Flood Rules," *E&E News*, 6 September 2016, https://www.eenews.net/stories/1060042323 (accessed February 2018).

23 Amite River Basin Drainage and Water Conservation District, *Amite River Basin Floodplain Management Plan* (Baton Rouge: Amite River Basin Water Conservation District, 2015), ch. 2-4, esp. 4.

Underscoring the rejection of memory, East Baton Rouge Parish swiftly set aside policies that contained requirements based on historical precedent. Within weeks of the 2016 flood, the parish council modified polices that required rebuilding substantially damaged properties a foot above the record flood. They declared the 2016 flood too extreme to stand as the record, and as a result the much lower 1983 record remains the baseline for construction and restoration.[24] As a consequence, unwitting property buyers bear the future burden—lured to high-risk locations by officially approved new roads and shopping centers, along with affordable real estate prices, and access to segregated schools.

French Settlement Catholic Church remained above the record flood. It occupies the highest land in this modest village that suffered extensive flooding beyond the community's original core. (Photo by author)

Policies contain explicit references to historic floods, but policymakers have opted to override public safety concerns with desires for taxable properties. In a tiny basin so beset with floods and one that will likely see more severe rain—as happened when 152 centimeters fell in Houston with the passage of Hurricane Harvey in 2017—these policies demand strict enforcement. Risk is rising as sprawl continues.

24 S. Hardy. "More than 32K Homes Can Stay on the Ground after Metro Council Exempts Many from Elevation Requirement," *Baton Rouge Advocate*, 14 September 2016, http://www.theadvocate.com/baton_rouge/news/article_4d8763b2-7a99-11e6-8efd-8bdcd69602e9.html (accessed September 2016).

Communities have been reluctant to affix physical reminders of flood lines, what McEwen and her colleagues refer to as essential mnemonic devices to help residents recall past floods. In the absence of such public displays of past flood levels, developers sell properties to unwitting buyers. Is it time for parish officials to require flood information to be part of property titles? Is it time for those who make a living subdividing land, along with risk, to place flood-height markers in the neighborhoods they develop, and to provide surety bonds, tied to local risk and past events, that can assist purchasers to move out in the event of a future flood and avoid repeated trauma? Is it time for the US Congress to modify the flood insurance program to encourage relocation rather than rebuilding in place? Is it time for policymakers to stand by ordinances that foreground safety over taxes and economic development? Some policies have flood memories embedded in them, but they have been set aside in the name of economic development. The long-term historical flood record not only must be built into development policy, urban planning, and construction codes, but adhered to in the wake of tragedy. We hope officials will take steps to ensure that flood memories persist between irregular tragedies, and that sensible policies will ultimately overcome the urge for unchecked sprawl.

Axel Goodbody

Climate Change and the Industrial Revolution: Informing Policy through History, Memory, and Literature

When the film director Danny Boyle was appointed artistic director of the opening ceremony of the 2012 Summer Olympics in London, he chose to trace the country's journey from a pastoral to an industrial nation, before ending with the forging of the Olympic rings. His brief history of Britain began with the quintessentially English scene of cricket on the village green, depicted the nation's industrialization in the nineteenth century, and culminated in a characterization of the land as one whose progressive vision and inventive creativity were symbolized by the National Health Service and the World Wide Web. Industrialization played a central role in this pageant, in which an army of workers shoveled earth, smelted iron, and raised great factory chimneys into the sky. The Industrial Revolution was presented as a heroic act and a matter of national pride: Britain led the world in the process of industrial modernization.

However, the work that Boyle's triumphal narrative of British history drew on—Humphrey Jennings's anthology of eyewitness accounts of the Industrial Revolution, *Pandaemonium* (subtitled "The Coming of the Machine as Seen by Contemporary Observers")—is more complex and ambivalent. The picture that the texts in Jennings's book paint is colored by concern over the loss of individual freedom and over deterioration of the quality of life; although this message is countered by moments of pride in technological advances and belief in our ability to one day abolish poverty, exploitation, and political injustice. The diversity of aspects of the great transformation that Britain underwent in the eighteenth and nineteenth centuries that Jennings presents, the insights into its social and cultural impact, and the openness of his account to different interpretations all make *Pandaemonium* instructive reading today, when we are faced by a second global energy system change—one imposed in large part by unintended consequences of the shift from wood, water, and wind to coal in the eighteenth and nineteenth centuries. In the following, I start by rehearsing briefly what prompted Jennings to assemble his anthology, what texts he chose, and how he arranged them,[1] in order to explain how the particular qualities of this book enabled it to serve as a model for the

1 For a fuller account, see Nicola Whyte and Axel Goodbody, "*Pandaemonium*: Narratives of Energy System Change in Historical and Literary Perspective," *Resilience* 6, no. 1 (forthcoming 2018).

Stories of Change research project. The project's aim was to promote public debate on cimate change and inform policymaking in the United kingdom by engaging in creative new ways with individuals and communities to elicit memories and stories of energy.

Jennings, who is principally remembered today for the documentary films that he directed during the Second World War, observing the behavior and values of Britons at war, was also a painter, a poet, and, together with his fellow Cambridge graduates, Charles Madge and Tom Harrisson, a founder of the Mass Observation movement. Mass Observation, founded in 1937, was a groundbreaking anthropological project that celebrated the lives of ordinary people by instructing volunteer observers to record public attitudes towards changes in everyday life in their diaries and in responses to questionnaires. Jennings's various activities were driven by his lifelong ambition to understand the British experience of modernity and, as Ben Jones and Rebecca Searle write, "to capture the profound impact on everyday life of a range of overlapping economic, social, and cultural transformations."[2]

Pandaemonium, which Jennings also began in 1937 and pursued up to his death in 1950, was a historical pendant to Mass Observation, an attempt to assemble a written record of the ways in which the birth of industrial capitalism and technological developments were experienced during the Industrial Revolution, and of the shifts in the way people understood the world and their place in it. In the Introduction, Jennings describes the book as "neither the political history, nor the mechanical history, nor the social history nor the economic history, but the *imaginative* history" of the Industrial Revolution (xiii; my emphasis). Examining the cultural transformations that preceded, accompanied, and followed the advent of industrial capitalism, he anticipated debates among later historians of the Industrial Revolution over whether scarcity of coal, technological advances, and the emergence of mass manufacturing were its principal drivers, or rather the rise of secular Enlightenment thinking.[3] However, his main interest was the impact of industrialization and modernity on British society.

2 Ben Jones and Rebecca Searle, "Humphrey Jennings, the Left and the Experience of Modernity in Mid-twentieth-century Britain," *History Workshop Journal* 75, no 1 (2013): 190–212, 191.

3 For an overview of the principal interpretations of the causes of the Industrial Revolution, see Fredrik Albritton Jonsson, "The Industrial Revolution in the Anthropocene," *The Journal of Modern History* 84 (2012): 679–96.

The Industrial Revolution emerges from the pages of *Pandaemonium* as simultaneously wonderful and cruel, awesome and destructive. On the one hand, it is shown to have brought a deterioration of social equality, individual autonomy, and quality of life for the masses, and a regrettable pursuit of material comfort at the expense of creativity. Many texts speak of a loss of political agency: the working class were liberated from the shackles of rural labor for landowners, only to become victims of new forms of exploitation by industrial elites and have their regimentation and subordination to production intensified in the process. However, other texts tell a different story, that of workers' self-organization, tracing how initially chaotic Luddism morphed into mass demonstrations that could in the end gain them emancipation. The ambivalence of the Industrial Revolution—which Jennings conveys so vividly by juxtaposing passages describing the misery of work in the cotton mills and the iniquity of child labor with others celebrating the achievements of inventors, industrialists, and ordinary laborers—prefigures the uneven distribution of the costs and gains from decarbonization today, its differing impact on individuals and communities across regions and states, and other unintended consequences.

Jennings's emotional preference for the preindustrial past finds expression in passages voicing concern over the loss of pastoral landscapes, the unraveling of traditional social structures, and the moral degeneration caused by industrial development and urbanization. Yet these do not entirely negate the narrative of scientific and human progress. The title "*Pandaemonium*" already reflects the complexity and ambivalence of energy system change. The normal meaning of the word is "noisy disorder," "confusion," "riotous disorder." However, the book opens with a passage from Milton's *Paradise Lost,* in which Pandaemonium is depicted as the capital of hell, built on the orders of Mammon. It is a product not of chaos, but of supreme order and rationality. Its construction is portrayed as "Satanic," anticipating the "dark Satanic Mills" in Blake's poem "Jerusalem" (which is reproduced on page 127 of *Pandaemonium*), but also as a heroic and sublime act. Jennings writes: "*Pandaemonium* is the Palace of All the Devils. Its building began c. 1660. It will never be finished—it has to be transformed into Jerusalem. The building of *Pandaemonium* is the real history of Britain for the last three hundred years."[4]

4 Humphrey Jennings, *Pandaemonium 1660–1886:The Coming of the Machine as Seen by Contemporary Observers*, foreword by Frank Cottrell Boyce, eds. Marie-Louise Jennings and Charles Madge (London: Icon, 2012), 5.

Pandaemonium is made up of extracts from records of personal experience: mainly letters, journals, diaries, autobiographies, biographies, travelogues, and newspaper articles, but also histories, political speeches, scientific reports—and even poetry and fiction. These give insight into the impact of change by conveying the writer's feelings together with factual information. Written by a wide range of people, the extracts present the same event from different viewpoints. Through its polyvocal and dialectical structure, *Pandaemonium* offers readers a series of different versions of historical events and prompts them to recognize how these meant different things to different people.

Jones and Searle have pointed to parallels with Walter Benjamin's contemporaneous Arcades project (1927–1940).[5] For all its differences in subject matter and structure, this was also an assemblage of sourced texts, commentary, and speculation that aimed to document the everyday experience of modernity in order to unlock its transformative potential. Jennings, like Benjamin, conceived of a form of history that worked with memories and stories in the service of emancipating the oppressed. He believed that individuals' experiences, communicated either orally or in writing, could serve as a crucial counterforce to dominant historical narratives, which reflected the standpoint of those in power. Remembering is for Jennings, as for Benjamin, a medium of individual and collective identity construction and maintenance, which are prerequisites for solidarity and social transformation.

A comparison of *Pandaemonium* with the historian E. A. Wrigley's account of the Industrial Revolution, *Energy and the English Industrial Revolution*, throws into relief the difference between history and memory. Wrigley is principally concerned with explaining how Britain came to overcome a production limit that would otherwise have inhibited domestic growth in the eighteenth century. Acknowledging the importance of institutional factors and scientific advances, but focusing on the availability and use of energy, he links economic history with contemporary issues of energy and environment, and writes of the dangers of pollution and climate change.[6] His quest for historical truth and his abstention from glorification of the past contrast with Danny Boyle's Olympic narrative of progressive emancipation from the shackles of nature through heroic struggle, culminating in social

5 Walter Benjamin, *The Arcades Project*, trans. Howard Eiland and Kevin McLaughlin (Cambridge, MA: The Belknap Press of Harvard University Press, 1999).

6 Edward Anthony Wrigley, *Energy and the English Industrial Revolution* (Cambridge: Cambridge University Press, 2010).

equality and a better world. But it is also significantly different from Jennings's collection of texts, which foregrounds the heterogeneous nature of historical change and presents the tensions that arose in the nineteenth century as still awaiting resolution. Jennings sought to raise critical awareness of the ongoing processes of sociotechnical change, to challenge readers to imagine alternatives, to provoke them into engaging with the historical process, and to prevent vision, energy, and aspiration from being hijacked by the forces of materialism and self-interest.

Viewed through such accounts, the Industrial Revolution can serve as a historical example of the inequalities and injustices generated by energy system transition, and of the many reasons for resistance to change—for instance where it involves breaking with cherished traditions, infringes moral or aesthetic norms, or ignores the values attached to practices and ways of life, and the threats to identities. The Anthropocene challenges us all to interrogate the accepted narrative framings of the past. As a composite memory text recalling the Industrial Revolution, *Pandaemonium*, like the Mass Observation movement, served as an inspiration for the research project "Stories of Change: The Past, Present and Future of Energy."[7] The project gathered a comparable range of experiences of and views on the transition to renewable energy between 2015 and 2017, thereby pluralizing and revitalizing public conversations about energy in three sites across England and Wales. With its interactive pathways inviting exploration, the project's web platform is a rich, multifaceted resource from which stakeholders in energy debates can learn much about how actions taken to address climate change affect people's everyday lives and determine their attitudes towards different forms of change, thereby broadening consensus on energy-system change and facilitating its implementation.

7 For an account of the work on this project, which was funded by the UK's Arts and Humanities Research Council, see Joe Smith et al., "Gathering around Stories: Interdisciplinary Experiments in Support of Energy System Transitions," *Energy Research and Social Science* 31 (2017): 284–94. http://dx.doi.org/10.1016/j.erss.2017.06.026; also Joe Smith and Renata Tyszczuk, eds., Energetic: Exploring the Past, Present, and Future of Energy (Cambridge: Shed, 2018).

Hans Farjon, Ed Dammers, and Henk van Zeijts

Nature in the Plural: Finding Common Ground for Nature Policies in Europe[1]

The recognition of the cultural value of nature—including, among other things, the way it functions as a site of memory—is important. The challenge for policymakers is to negotiate a nature's cultural value along with the other values it might have, such as ecological, recreational, and economic value. In our contribution, we explore work done in the Nature Outlook study by PBL Netherlands Environmental Assessment Agency on the various narratives of nature and nature policies by outlining the method we used to construct a multi-perspective approach for nature policies, and reflect on the policy messages that can be derived from the different stakeholder narratives.

Challenges for Nature Policies in Europe

European landscapes contain a rich natural diversity that is cherished by many citizens. People have a broad notion of nature, considering "nature" to constitute landscapes, ecosystems, and biodiversity. Protection of this diversity is laid down in policy strategies on European and national levels. Although successes have been achieved in biodiversity conservation, a recent review of the EU Biodiversity Strategy showed that additional efforts are needed to achieve the 2020 targets. Even more effort is required to realize the 2050 vision—which is to protect, value, and restore EU biodiversity and the ecosystem services it provides. Recent reviews and trend analyses have shown there to be three overall challenges for the coming decades with respect to nature conservation: ensuring sufficient space and favorable conditions for nature, improving the visibility of nature in economic sectors, and encouraging people's engagement in nature- related efforts. A closer connection between nature policy and the ways in which people experience and value nature may enhance their engagement in nature-related efforts.

1 In March 2017, PBL Netherlands Environmental Assessment Agency launched the results of the Nature Outlook study: H. Van Zeijts, A.G. Prins, E. Dammers, M. Vonk, I. Bouwma, H. Farjon, and R. Pouwels (2017). *European Nature in the Plural: Finding Common Ground for a Next Policy Agenda*, (PBL Netherlands Environmental Assessment Agency: The Hague, 2017). The aim of the study was to provide inspiration for current strategic discussions on EU policies on nature beyond 2020.

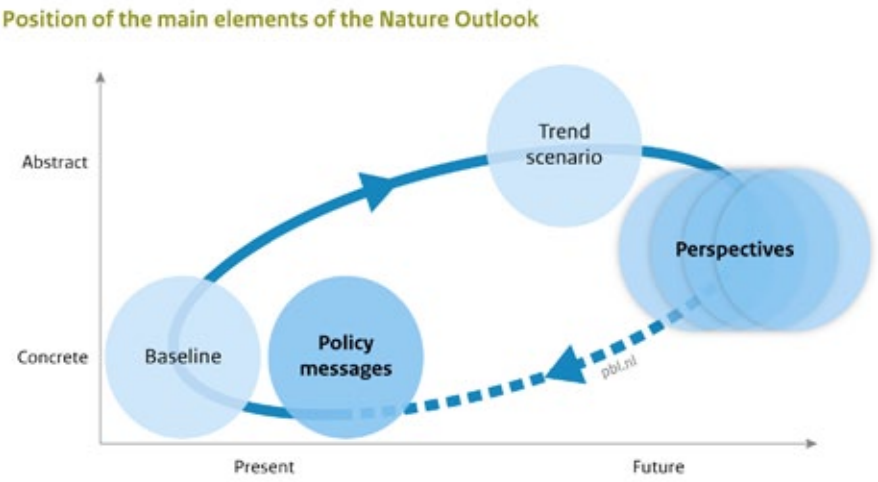

Figure 1: The main components of the Nature Outlook method. Source: PBL

The Nature Outlook Method

The Nature Outlook method consists of a baseline, a trend scenario, four perspectives, and several policy messages (see figure 1). These components have been constructed not only from literature review, but also by using the results from a survey of citizens' images and values of nature, a philosophical dialogue on the relationships between people and nature in Europe[2] and several stakeholder dialogues on the future of nature.

The baseline was created by analyzing past and current debates on nature conservation and development in the European Union. To identify different views of nature, we conducted a literature review of scientific articles. The articles, however, pay little attention to policies and practices in eastern and southern EU member states, and so we interviewed scientists from these member states to redress the balance. The descriptions of the different views were substantiated by a survey of citizens' images and valuations of nature in nine EU Member States.[3]

2 H. Mommaas, B. Latour, R. Scruton, W. Schmid, A. Mol, M. Schouters, E. Dammers, M. Slob, and H. Muilwijk, *Nature in Modern Society - Now and in the Future* (PBL Netherlands Environmental Assessment Agency, The Hague, 2017).

3 H. Farjon, A. De Blaeij, T. De Boer, F. Langers, J. Vader, and A. Buijs, *Citizens' Images and Values of Nature in Europe: A Survey in Nine EU Member States* (PBL Netherlands Environmental Assessment Agency: The Hague, 2016).

The debates on nature conservation and development can be summarized in four different framings—views—of nature that define four different challenges for nature policy and other related policies. According to the "nature for itself" view, the main policy challenge is to stop the decrease in areas of unspoiled nature. In the "nature despite people" view, the impacts of human activities on natural habitats should be limited, and action taken to enhance their resilience. "Nature for people" emphasizes that the utility value of nature should be integrated into business and nature management without depleting natural resources. And "people and nature" stresses the importance of the connection between people with nature, and calls for this to be recognized in policy.

The trend scenario was also based on a literature review, mainly including other outlook studies exploring trends with impacts on nature, and scientific publications providing insight into the impacts of these trends on nature. The scenario includes not only quantitative trends, such as population development, but also qualitative trends, for example, shifting values, and nonquantifiable challenges, for instance, strengthening citizens' connection with nature.[4]

For the Nature Outlook, we explored four perspectives on nature in 2050, with the aim to inform a future agenda for nature policies beyond 2020. Each perspective describes and visualizes an alternative storyline about a desirable future state of nature in the EU, and a possible pathway towards realizing that desired state of nature. The perspectives are normative scenarios and should not be considered as blueprints.

The perspectives were constructed through dialogues with stakeholders, interviewing experts, a literature review, and by combining different visualization methods. The dialogues were set up to establish a series of informal discussions in which experts involved in nature policy and related policies developed the outlines of the components of the Nature Outlook study. In these informal discussions, experts from various organizations and sectors met, face to face, to exchange values, views, and insights, to challenge one another, and to develop new ways of thinking. Three stakeholder dialogues were organized. During the first dialogue, participants drafted the four perspectives. These drafts subsequently were structured and elaborated in storylines by

4 Detailed information on quantifiable challenges, such as halting biodiversity loss, can be found in A. G. Prins, R. Pouwels, J. Clement, M. Hendriks, B. De Knegt, K. Petz, A. Beusen, H. Farjon, A. Van Hinsbergen, J. Janse, B. Knol, P. Van Puijenbroek, M. J. Schelhaar, and S. Van Tol, *Perspectives on the Future of Nature: Impacts and Combinations* (PBL Netherlands Environmental Assessment Agency: The Hague, 2017).

the scenario team, and discussed further in the second dialogue. During the third dialogue, participants used the perspectives to discuss a range of societal issues related to nature.

The four perspectives on nature cover a range of guiding values about nature protection and describe what people perceive nature to be:

- In *Strengthening Cultural Identity*, people feel connected with nature and landscape, and consider this an integral part of their local and regional communities and essential to a fulfilling life.
- In *Allowing Nature to Find Its Way*, people feel strongly about the great intrinsic value of natural processes and species; they define nature by its dynamic processes and believe it should be left to its own devices.
- In *Going with the Economic Flow*, nature must suit people's lifestyles, and businesses and individual citizens take the initiative in nature development.
- In *Working with Nature*, people try to work with natural processes and strive for an optimal, long-term delivery of ecosystem services, for the benefit of both society and the economy.

The storyline of each perspective presents a set of principles (why), a desired state of nature that may be realized in 2050 by applying the principles (what), and a pathway that could be followed to reach that state of nature by 2050 (how). The principles consist of the values guiding the perspective and the major policy challenges the perspective responds to. The description of the desired state of nature includes a narrative of the general state of nature in the EU and also of the states of nature in nature, river, rural, and urban areas. Parts of the principles can be translated into spatial terms, which can result in land-use changes or changes in the forms and structures of the landscapes. The pathway comprises the circumstances and coalitions that may cause changes to nature policy in the years up to 2050, the mode of governance that may be applied to realize the state of nature in 2050, and the measures that may be taken by nature policy and related policies. Each storyline is illustrated by maps, a set of artist impressions (see figure 2), and a short video.[5]

5 The video can be found here: http://themasites.pbl.nl/natureoutlook/2016/news-2/what-is-your-perspective-on-nature-watch-the-videos (last accessed 3 September 2018). For the full description and visualization of the storylines, see E. Dammers, K. Ludwig, P. Van Puijenbroek, A. Tisma, S. Van Tol, M. Vonk, I. Bouwma, H. Farjon, A. Gerritsen, B. Pedroli, and T. van der Sluis, *Perspectives on the Future of Nature in Europe: Storylines and Visualisations* (PBL Netherlands Environmental Assessment Agency: The Hague, 2017).

Figure 2.:
Examples of : a nature area, a river area, a rural area, and an urban area according to artists' impressions in line with *Strengthening Cultural Identity*. Images: AENF Visuals

Deriving policy messages starts with creating stimulating conditions by organizing a series of informal dialogues that precede or run parallel to formal decision-making processes. Key to the success of such dialogues is arranging unexpected encounters, creating shared understanding, and building joint visions. Building a joint vision can be considered as a design activity that, to a large extent, is characterized by "bricolage" (improvisation). There are four ways of practicing bricolage. which can be summarized as follows:

a) Making a pastiche refers to the choosing of a single perspective as a source of inspiration for building a joint vision.
b) Constructing a palette refers to combining elements from various perspectives into one joint vision by allocating different types of land use to distinct sub-areas that are not interrelated.
c) Fashioning a collage refers to combining elements from various perspectives into one joint vision by allocating different types of land use to adjacent sub-areas.
d) Creating an assemblage refers to combining elements from various perspectives into one joint vision by allocating the different types of land use to the same sub-area.

Policy Messages

Formulating a Multifaceted Vision for European Nature

It is clear that reaching the policy vision for 2050 is a challenging undertaking. A policy vision that explicitly takes the multiplicity of perspectives on nature as its point of departure, as shown here with our Nature Outlook model, could stimulate voluntary efforts that go beyond regulation, and lead to new coalitions being formed of citizens, businesses, and authorities.

Tackling Policy Challenges Using Approaches from a Range of Perspectives

We need to discuss what such a vision would mean for dealing with the three policy challenges:

- The necessity of a shared agenda for nature areas. An agenda that is shared by all stakeholders would help to ensure sufficient space and favorable conditions for nature in protected nature areas. Such an agenda would contain the ecological objectives, supplemented with external economic and societal aspirations and targets, for each protected nature area and its surroundings. The main point for discussion would be how to balance ways of earning money with protecting the biodiversity of each site.
- Furthermore, the impacts of climate change are expected to increase, requiring substantial efforts to protect all species. In addition to stringent measures to mitigate climate change, it may be appropriate to discuss the focus of conservation targets, which could range from preserving current ecosystems to supporting species and ecosystems, in their response to the changing climate.
- Increasing nature's relevance for the sustainable future of various economic sectors. Embedding or mainstreaming nature considerations in sectors such as agribusiness and the renewable energy sector is more likely to succeed if the core values and individual challenges of each sector are acknowledged and understood. This also could mean, however, that "nature" will need to be defined differently than it is in current biodiversity policy documents, and these differences in definition will be a subject for debate.
- Strengthening the connection between people and nature. A multifaceted vision acknowledges that there are many different opinions about what constitutes "desirable nature." Recognition of this might encourage individuals and groups to get involved in nature conservation. Addressing nature in such a way that it fosters a sense of place, yielding a broad range of ecological and societal benefits, would be a promising start in making policy that meets the needs of a challenging future.

Conclusion

Many contributors to this volume have called for policymakers to recognize the multiplicity of narratives around disaster sites. The research summarized in this essay shows the importance of involving people in nature protection and the necessity of integrating multiple perspectives into environmental policymaking in order to meet European goals of sustaining our much-valued ecosystem into the future.

Permission to Forget

Giacomo Parrinello

To Whom Does the Story Belong? Earthquake Memories, Narratives, and Policy in Italy

I started working on Italian earthquake histories in 2008. I have always been aware of the mighty power of earthquakes on human lives and landscapes. Yet I did not anticipate how often I would be forced to reconnect my dusty archives with a shaky present.

In 2009, when I was still trying to make sense of my dissertation, a major earthquake struck the city of L'Aquila. In 2012, I had defended my dissertation and was back in Bologna when another earthquake struck closer to home, in Emilia. In 2016, after I had published my book, it was again central Italy's turn.

It's happening constantly. And yet every time it seems unprecedented.

Every time, Italy rediscovers that the earth can shake. Every time, Italians rediscover that they were not prepared enough. Every time, we witness thousands of homeless people put in tent camps, hotels, huts, and containers. Every time, earthquakes become seismic disasters.

It is not for lack of knowledge.

The year after the 1980 Irpinia earthquake, historian Piero Bevilacqua claimed that we should see earthquakes in southern Italy as "historical agents."[1] They make history, and they make it often.

Pretty much at the same time, Emanuela Guidoboni was undertaking the first steps of the monumental work that led to the Catalogue of Strong Earthquakes in the peninsula.[2] The evidence painstakingly pieced together by Guidoboni and her team at the INGV (National Institute for Geophysics and Volcanology) was and is overwhelming: the Italian peninsula really does shake, and quite often with disastrous consequences.

1 Piero Bevilacqua, "Catastrofi, continuità, rotture nella storia del Mezzogiorno," in *Laboratorio politico* 5–6 (1981): 177–219.

2 Enzo Boschi, Emanuela Guidoboni, Graziano Ferrari, Gianluca Valensise, and Paolo Gasperini, eds., *Catalogo dei Forti Terremoti in Italia dal 461 A.C. al 1990* (Roma: Istituto Nazionale di Geofisica, 1997).

Historical knowledge alone is not sufficient for disaster preparedness. Why? I believe the answer has a lot to do with a fundamental disconnect between the memory that is incorporated (or not) in public policies, and memory as embodied in affected communities' sense of place. We need to bridge this gap if we are to address the reasons why seismic disasters continue to happen.

State Memory

In a series of papers following the devastating hurricane Katrina, historical geographer Craig Colten has shed light on the importance of "social memory": the memory of disasters (and their lessons) as it is embodied in institutional practices, knowledge, and regulations.[3]

National legislation on anti-seismic building can be seen as example of such "social memory." Earthquake-proof building codes were introduced on a local basis at least from the early modern period. After the devastating 1908 Messina earthquake, legislators extended such building codes nationwide. This laid the foundation for existing law, which defines seismic risk—and consequently, engineering regulations—based on past occurrences.[4]

Likewise, the establishment of a civil protection department was a deliberate (albeit belated) act of social memory transmission. This department was created after a devastating sequence of major disasters (Belice 1968, Friuli 1976, Irpinia 1980) that had tragically exposed the absence of a special unit of the state administration charged with managing disaster prevention and recovery. Its history reveals a hard-learned lesson, relayed by the memory of proximate events.[5]

In Italy, however, these forms of social memory have not been matched by a public discourse on seismicity and on disasters as part of the country's experience and collective identity. They do not tell a shared story about an earthquake country.

3 Craig Colten and Amy Sumpter, "Social Memory and Resilience in New Orleans," *Natural Hazards* 48, no. 3 (2009): 355–64.

4 Sergio Castenetto and Massimiliano Severino, "Dalla prima normativa antisismica del 1909 alle successive modifiche," in Guido Bertolaso, Enzo Boschi, Emanuela Giudoboni, and Gianluca Valensise, eds., *Il terremoto e il maremoto del 28 dicembre 1908: Analisi sismologica, impatto e prospettive* 425–40 (Bologna: Bononia University Press).

5 David Alexander, "The Evolution of Civil Protection in Modern Italy," in John Dickie, John Foot, Franck M. Snowden, eds., *Disastro! Disasters in Italy since 1860: Culture, Politics, Society* (Basingstoke: Palgrave Macmillan, 165–85).

A national discourse on earthquakes does exist. Past seismic disasters are sometimes commemorated at symbolic anniversaries in official ceremonies, with the participation of the highest officers of the state. These commemorations are an opportunity to discuss the effectiveness, or lack thereof, of the state's response to the past emergency, or to the reconstruction.

Rarely, however, on such occasions is there any discussion of the enduring hazards and the reasons for the recurring disasters. Most importantly, these events commemorate something that happened to *them*—the communities affected by the earthquake—not *us*, the national community commemorating it. Earthquakes arguably killed more Italians than mafia or terrorism, but we do not talk about them as if they were part of our story. They belong to someone else.

Local Memories

These are not easy memories to bear. Not only because they are memories of suffering and death, but also because they speak of failures and injustice: the failure of the state, and the injustices that contributed to the uneven effects of seismic disasters, such as lack of adequate infrastructure or unequal access to income.

Local communities, however, can hardly escape the burden of memory. From the very beginning, they are called to make hard choices about whether and how disaster memories are inscribed in landscapes and into institutional practices and regulations. Yet the transmission of social memory has not necessarily always been the first preoccupation of the communities, or at least of their representatives.

In 1968, for instance, the inscription of many localities of southwestern Sicily into the maps of seismic risks was the subject of a heated conflict. At first, lured by the access to reconstruction funds, many communities wanted to be included, even if they had experienced only light damages. However, as soon as it became clear that it entailed much more rigorous building regulations, they demanded to be excluded.[6]

6 Consiglio Superiore dei Lavori Pubblici, "Dichiarazione di sismicità dei Comuni della Sicilia colpito dai terremoti del gennaio 1968. Riesame," 22 November 1968, box 1, Terremoti 1968 Classificazioni zone sismiche, Archivio Storico della Protezione Civile.

The case of Palermo, in Sicily, is perhaps the most striking. The inhabitants experienced the tremors in 1968 and fled their homes in panic. The city had not been on seismic maps until that moment. This occurrence suggested that it needed to be.

Someone, however, believed otherwise. Municipal authorities put up a hard fight against the state and its experts to avoid inclusion in seismic risk maps, claiming this would harm the local construction industry. The city administration won its battle. But there was a price to pay: the memory of the 1968 earthquake was not transmitted in building regulations.

Should we conclude that forgetfulness is unavoidable, if not necessary for communities to move forward? Perhaps. But as memory-making is a process rather than a condition, nothing is decided once and for all. Individual, collective, and public memories can resurface, transformed, in the shape of the landscape, or in the stories that people tell. Such narratives help people come to terms with the disaster and to incorporate it into a renewed sense of place.

Storied Landscapes

In the Belice Valley, as in many other earthquake disasters before and since, several communities had to abandon their settlements and relocate them to different sites. Nowadays, these abandoned towns embody multiple and sometimes radically opposite forms of memorialization.

In the 1980s, the ruins of old Gibellina were converted in a gigantic land artwork by sculptor and painter Alberto Burri. Burri's *Cretto* (meaning crack, or fissure) is now one of the main attractions of the area (figure 1). While many survivors have opposed the project, perceiving it as a definitive break with their former lives and memories, others have celebrated it as a meaningful example of art in the service of public memory.

The *Cretto* forms a sharp contrast with other abandoned towns. In Poggioreale, the remains of the streets and buildings have been (artificially) preserved exactly as they looked at the end of rescue and recovery operations, and the ghost town is now a favorite destination for semi-official disaster tours (figure 2). Montevago, another re-

Figure 1.
Source for all photos: Giacomo Parrinello

Figure 2.

settled community, has been completely abandoned to the injuries of time and illegal waste disposal (figure 3). The new town of Santa Maria Belice is slowly reabsorbing the abandoned town, one restructured building at a time (figure 4).

While dealing with the confounding text of these landscapes of ruins, the Belice Valley communities have also started to tell their stories. In 2007, a museum of memory was established in Santa Margherita. The museum, hosted in a former church that was

Figure 3.

Figure 4.

destroyed in 1968 and recently rebuilt, showcases pictures and other items about the Belice Valley towns prior to the earthquake, as well as the survivors' everyday struggles and their return to normal life (figure 5).

Figure 5.

The CRESM (Center for the Economic and Social Study of Southern Italy), a nonprofit organization whose roots go back to the 1970s, has been at the forefront of memory initiatives. In 2009, the CRESM launched a campaign of oral history recollection among earthquake survivors and activists from the popular movement for social justice and development that was very active in the 1960s and 1970s in Belice Valley. This oral history initiative culminated in 2011 in the establishment of Epi/Centro, a permanent multimedia exhibition on the earthquake and how the community mobilized in response to it (figure 6).[7]

When I visited these exhibits a few years ago, I was struck by the profound difference in the stories they tell: a story of individual struggles for normalcy versus a story of collective mobilization for justice. I had the same impression from the disaster landscapes: a narrative of irreparable fracture in Gibellina's *Cretto*, of suspension of time in Poggioreale, of reappropriation in Santa Margherita, and of rejection in Montevago.

7 Epi/centro della Memoria Viva, accessed 22 May 2018, http://www.epicentrobelice.net/.

Figure 6.

These differences are important. They point to the difficulty in dealing with the memory of trauma and the multiple (and sometimes conflicting) ways of remembering. They can reveal or conceal the injustices that are such an important part of this landscape, as Serenella Iovino forcefully reminds us.[8] Stories are not all equal.

But despite their differences, these examples have one thing in common: the effort to incorporate the earthquake and its memory in a renewed sense of place. Burri's land artwork and Poggioreale's suspended ruins, Gibellina's EpiCentro and Santa Margherita's museum of memory recount the earthquake as a fundamental feature of place. They contribute to its inscription into the hi/stories of people and landscape.

8 Serenella Iovino, *Ecocriticism and Italy: Ecology, Resistance, and Liberation* (London: Bloomsbury, 2016).

Conclusion

I don't believe in the mystique of the local. As the case of Palermo in 1968 clearly shows, local actors can work against the transmission of social memory. Yet local communities are also extraordinary producers of memories and narratives about disaster.

In that, the Belice Valley is by no means unique. Communities in other disaster areas have promoted similar initiatives to mourn, repair, or simply remember past events. Oral historians such as Gabriella Gribaudi, often working in connection with these affected communities, are promoting the relentless collection of individual stories from seismic disaster areas and establishing online repositories.[9]

We need to start from these stories.

We need to start here because local actors play such a crucial role in the transmission of social memory. But also, and perhaps more importantly, because what we lack in Italy is not so much the awareness of past earthquakes, or detailed seismic maps. We lack stories that can translate knowledge into a renewed sense of place and cultural identity. Local communities know how to do it. They offer an impressive repertoire of examples and practices from which to draw. And they teach us how delicate the work of storytelling about disasters is. They tell us stories of struggle for justice, or a return to normality. They teach us about stories of loss. They tell us about the contradictions and complexities of remembering and forgetting. They teach us about the possibility of living *differently* on (and with) an unstable earth.

We need to acknowledge and embrace the power of these stories: the power of moving beyond the realm of knowing, and into the realm of belonging.

But local stories are not enough—they cannot suffice alone. We need policies that encourage, support, and weave together storytelling; policies that acknowledge earthquakes as part of place and community. We need policies that help to scale up these narratives countrywide and exploit the medium (from museums to oral history repositories) to remember and recount the histories, and losses, of an earthquake country. We need this to lay the foundation for a renewed sense of place. Because the story belongs to all of us.

9 Archivio Multimediale delle Memorie, accessed 22 May 2018, http://www.memoriedelterritorio.it.

Susann Baez Ullberg

Learning from Loss? The Politics of Memory and Morality in the Post-disaster

The Post-disaster as an Analytical Lens

Despite much global and local effort in recent decades to mitigate and prevent disasters, recent hurricanes Harvey, Irma, and Maria, the flooding in Belarus and Rwanda, and the sand storms in India show that the environment continues to put societies to the test. To reduce the risks of future disasters, we need to learn from past ones, as is often proclaimed, but how do we achieve this beyond safety as a cliché? Disasters are critical and all-encompassing events and essentially the outcome of societal vulnerabilities and hazardous forces, which, in our era of the Anthropocene, are increasingly entangled. Disasters are not only material and spatial events, but also temporal phenomena in that they occur in and over time, grounded in historical processes that forge the present and shape future actions. A temporal perspective on disaster asks not only when and how the risks that led to the disaster were produced, but also when and how a disaster ends—if it ever does. While disaster managers and decision makers turn to the next crisis, disaster survivors and others affected live on with the affective and material experiences of acute events and their aftermath. In addition, recovery and reconstruction processes often have social and political consequences that can be flawed and misguided. Contemporary disasters tend to have long public afterlives also because they are often, albeit not always, politicized and even judicialized. To understand the effects of disaster, to learn from them beyond a focus on the type, magnitude, and losses of the event, we need to zoom in on the post-disaster process, which is when the event is culturally and politically signified—that is, remembered.

A Short Note on Memory and Morality

Memory is the principal mechanism that mediates past experiences with present understandings and anticipatory actions. It is well established by now that memory is as much an individual as a social phenomenon; a heterogeneous, dynamic, and situated process that is made in the past as much as in the present. Actors make memory in many ways:

through rituals, oral and audiovisual narratives, artifacts, and memorial places, but also through daily practices and embodied action. Social memory is not only made through practices of remembering, however. Forgetting also plays a vital role here. Oblivion is arguably an inherent feature of modern societies and what makes modernity possible in the first place, because it enables what is new. This thinking is articulated in critical ideas of disaster interventions as enabling drastic social and economic change, which is a form of amnesia of what was there before (instead of restoring what used to be there). What is being remembered and/or forgotten in societies is largely a consequence of who remembers and from which position in the social structure this remembering takes place at a given point in time. Public remembering easily turns into politics of memory and framing contests that are shaped by stakes at play for the involved actors, but also by subjective perceptions, cultural notions, and moral understandings of good and bad actions taken in the disaster and its aftermath. In this sense, memory and morality go hand in hand—it can be a duty not to forget, or treason to remember. Drawing on ethnographic research in Argentina and Sweden, I argue that studying the entangled processes of social remembering and moral reasoning can make a significant contribution to the understanding of risk governance and of societies' repeated failures to prevent disaster and to build back better.

The 2003 Flood in Argentina

On 29 April 2003, an unfinished dike transformed a flood into a big disaster in Santa Fe City, the eighth largest city in Argentina, located at the confluence of two large rivers. Twenty-three people died in the emergency and more than one hundred died in the following years as an indirect consequence. One-third of the population of the city, about one hundred and thirty thousand inhabitants, had to be evacuated for weeks and in some cases months. Hundreds of families had no home to return to. The disaster came to be called by the city's inhabitants simply "the flood." In the wake of the disaster and the years to follow, the memories of "the flood" would structure their lives. For years afterwards, memories of "the flood" loomed large in the everyday lives of the citizens in absences, smells, and small talk. Parallel to this evocative and reminiscent remembering, affected inhabitants commemorated the disaster through ritual practices and memorials. Survivors and activists also organized protests against the government, which they considered responsible for the disaster, clamoring for justice and economic

compensation. This movement used memory as a tool of protest, arranging rallies and manifestations at certain times and in certain places connected to "the flood," and pressing charges against decision makers as a way of keeping their claims on the local political agenda. The local and provincial government, in contrast, practiced a logic of omission, avoiding public comments, ceremonies of commemoration or public monuments, and any thorough inquiry into the much-criticized disaster-management process. "The flood" seemed to have come completely unexpectedly, but according to historical sources, at least 30 extraordinary floods had afflicted the town since the time of its colonial foundation. Given this historical experience, it was rather striking that risk reduction and disaster preparedness were so poor. Had the earlier floods been forgotten? My research shows that they were recalled, rather than forgotten, as part of a longstanding historical problem of flooding, rather than singled out as an extraordinary disaster event like the 2003 flood. Historical flooding in Santa Fe was in fact publicly considered "normal" and a problem that "typically" would affect the people in the poverty-stricken and peripheral lowlands. The inhabitants of the flood-prone outskirts themselves did not practice any active commemorations of the many past floods they had experienced, but this did not mean that they were oblivious to these disasters. Rather, their flood memories were of a reminiscent and evocative character, embedded in local everyday life and emerging through daily practices, such as fishing or market trading; by passing specific places or by using particular artifacts. Their memories, however, were forgotten overall in Santa Fe's public urban flood memoryscape; the extraordinary memory work around the 2003 disaster came at the expense of these embedded local memories of recurrent flooding. Thus, the memory of one singular past flood only reproduced risk for future flooding.

The 2014 Wildfire in Sweden

The summer of 2014 was extraordinarily dry and warm in Sweden, and many municipalities declared fire bans within their respective jurisdictions, as the fire risk was extremely high. The Rescue Services had already extinguished several smaller forest fires when, on 31 July, a spark from a forest machine, working near the town of Sala in Västmanland County to prepare the soil for forest plantation, accidently caused a fire. Within days the fire had spread over an area of 13,100 hectares, of which 75 percent was productive forest land. One person died, and two people were injured in the emergency. Almost a hundred buildings were damaged or destroyed. A total of one thousand people

and nearly two thousand farm animals were evacuated due to the fire. Among the affected landowners were both small-scale family forest producers and large-scale forest companies. In the post-disaster, extraordinary measures were taken to manage this—by Swedish standards—extraordinary disaster. A special unit was created within the Västmanland County Administrative Board to coordinate the support for people affected in collaboration with all public and civil society actors involved, and according to the principle of "good dialogue." This was a trope for a transparent, empathetic, pragmatic, and unbureaucratic model of governance. There was an active decision not to build any public monument or to establish a day of commemoration, in order not to remind the people affected of the event and potentially stir up painful emotions. The year after the disaster, the County Board decided to declare the ravaged forest a nature reserve. The aim was to preserve the area for the study of the long-term ecological effects of the fire, and, despite the prior reluctance to create sites of remembering, the ambition was also to turn the area into a memorial of the disaster. Special visiting sites within the reserve were built, with observation towers, information boards, and rest areas. This was also a measure to handle disaster tourism. Many people from the region and beyond had traveled to see the fire at the height of the emergency and afterwards to see its devastating effects. To their voyeuristic gaze, the fire became a spectacle, and they took pictures and selfies in front of it. Their presence in the area was not only dangerous because of the risk of falling trees, but unpleasant for those people living in stricken areas. The creation of the nature reserve was a way of keeping people within the defined and safe confines of the scorched forest memorial. In the post-disaster, numerous public investigations were commissioned to evaluate the disaster event and its public management. In addition, many scientific research projects were launched to study the psychological, social, and ecological effects of the forest fire. The inquiries in general lauded the actions by local, regional, and national crisis managers, yet they also identified numerous flaws in the interoperability of the Swedish disaster-management system. Judicial investigations around causal responsibilities have been strikingly slow and inclined towards avoiding blame. In late 2017, one of the country's Land and Environmental Courts exonerated the private forest company Stora Enso from responsibility; the prosecution recently made by the State Attorney is due in January 2019, almost five years after the disaster. Taken together, the 2014 wildfire is publicly remembered as an unfortunate accident that everybody did their best to manage. Little, if any, public debate has addressed social vulnerability and climate change, or the role of the Swedish forest industry—all things that would need to be addressed in order to enhance disaster risk reduction.

So What?

By now it should be clear that the two cases presented are not analytically intended for strict comparison, embedded as they are in specific cultural, political, historical, and ecological contexts. Rather, studied in tandem, they let us gain complementary theoretical insights about how social processes of remembering/forgetting and of moralizing around past disasters operate in the post-disaster process of making meaning. While the Argentinian case took the shape of a highly politicized and judicialized blame game, enabled by processes of memorializing the flooding in a larger context of vulnerability and political violence, the Swedish case illustrates instead a logic of omission enabled by a set of moral ideals including emotional control and consensus building, embedded in a political history of a strong welfare state in which open criticism and conflict is rationalized. As scholars, we can learn much from this focus, and I believe in taking peoples' memories and moral concerns around disasters and environmental problems seriously. Disastrous events are likely to elicit all kinds of interpretations in affected societies. We need to pay close attention to the many ways in which a disaster is remembered, but more importantly, to what is **omitted** from public discourses of such events. Such careful analysis of social remembering takes time, because social remembering is not only a **selective** and **unequal** process subject to different stakes and resources to make public memory, but one that is **dynamic** and subject to change over time. Policymakers need to carefully ask how a disaster is remembered among the people and organizations affected, and what the **effects** of that are, before rushing off in the wake of disaster to build official monuments and establish commemorative rituals that express merely their moral concern to pay respect to the victims. Historical examples abound of governments, politicians, and political parties striving to govern public memory and (re)write history. Making way for, and including, the multiple memories that are produced in society in the post-disaster is to democratically bridge the gap between policymaking, people, and politics. That is the lesson to learn.

Edward Simpson

Memory and Earthquake Forgetfulness in India

Earthquakes rupture everyday life. In the process, different kinds of memory practice come to the fore. Some of these may relate to personal loss, others to collective identity, state control of narratives, or the importance of remembering the possibility of disaster for future risk or mitigation planning. Over the last few decades, there has been a great investment after natural disasters in linking memory to heritage or to collective catharsis. Humanitarian organizations and governments have sponsored memory projects, publications, and memorials in the attempt to harness the power and influence of memory for the collective good. In the process, the focus on the importance of memory has obscured parallel processes of forgetting. Memory has perhaps been romanticized and turned into an object of social capital that the dispossessed can take inspiration from, if only given the correct encouragement.

As memory has taken a place in the humanitarian repertoire, indigenous knowledge has been seen as a repository of accumulated wisdom, rather than a hotchpotch of contradictory ideas. Memory has become a stable sociological condition that can be worked with as a resource. In this paper I suggest that memory is central to what happens after disasters, but so too is forgetting, and there is nothing inherently stable or constant about either category.

I conducted research in Gujarat, India, on post-earthquake reconstruction between 2001 and 2011.[1] My attention was drawn to the importance of memory for regional identity, collective struggles, and the ways in which lines were drawn between insiders and outsiders.[2] I followed memorial debates and the ways aid organizations cultivated an awareness of heritage, monuments, and folk traditions, which they felt might otherwise be lost in a rush towards the type of bland modernity fostered by neoliberal reconstruction regimes.[3]

1 Edward Simpson, *The Political Biography of an Earthquake: Aftermath and Amnesia in Gujarat, India* (London: Hurst, 2013).
2 Edward Simpson and Stuart Corbridge, "The Geography of Things That May Become Memories: The 2001 Earthquake in Kachchh-Gujarat and the Politics of Rehabilitation in the Pre-memorial Era," *Annals of the Association of American Geographers* 96, no. 3 (2006): 566–85.
3 Edward Simpson and Malathi de Alwis, "Remembering Natural Disaster: Politics and Culture of Memorials in Gujarat and Sri Lanka," *Anthropology Today* 24, no. 4 (2008): 6–12.

Throughout the course of this research, memory was a prominent ethnographic theme. Memory brought people together and gave them a sense of belonging and distinction.

The key lesson from that research is that memory politics are vitally important and always contested, and that there can be no quick fix. Efforts to intervene in the landscapes of memory will always produce differences of opinion and disputes over ownership, and provoke the range of emotion from ambivalence to enthusiasm. At the time, however, I thought such efforts were largely misguided and hasty. Looking back, it is now easier to see how these conversations were vital in Gujarat and how new forms of uneasy peace have been created from conflict and disagreement about who had the right to talk and remember. In sum, memory interventions are important and helpful in the longer term—even if, in the short term, the effects are almost inevitably conflict and disagreement.

The same hindsight also makes me more aware of forgetting. In what follows, I describe the repeated collapse of the town of Anjar and the repeated return of its inhabitants to inject new life into the ruins. Each earthquake is also accompanied by other momentous events: 1819 coincides with the consolidation of British colonial rule; 1956 sees Jawaharlal Nehru, one of the great men in the modern history of the country, come to inaugurate a new town at a safe distance from the ruins; 2001 sees the incredible tragedy of 184 school children parading for the Republic killed in the same spot. Despite the potency and poignancy of each of these dramatic events, after each earthquake people gradually return to rebuild in an area that history, if not science, as we will see, suggests is dangerous.

The 2001 earthquake happened on Republic Day, a national holiday. For the nation, it was an occasion to raise the flag and sing patriotic songs. Plates of a geological fault slipped, causing the ground to convulse. Widespread damage to property and life ensued. The worst-affected areas were the towns of Bhuj and Anjar and some other places in Kutch District in the west of the state. These towns had a strong claim on the traditions of the region and this fact was consequential for what was remembered and forgotten. In Anjar, 184 children participating in a parade to mark Republic Day were crushed to death. This loss sat poignantly at the center of the heart-wrenching national tragedy.

The earthquake of 2001 uncovered both material evidence and neglected memories of previous earthquakes. In Bhuj, the inner fortress of the former kings shed its skin of roughly hewn stone, revealing an older and elegantly ornamented façade of marching

elephants and other portentous signs. No one knew of the older structure; it had been forgotten. The bastions had been strengthened following their partial collapse during the earthquake of 1819. The history of forgetfulness vividly displayed by this exfoliation dates back to the beginning of the nineteenth century; then, the convulsions of the earth coincided with the arrival of British colonial power and an unorthodox regime change in the palaces of Bhuj—seat of royal power in a provincial but self-contained and influential kingdom.

James Burnes, the surgeon of the establishment, recorded how the earthquake crushed the tyranny and injustice of the old ruler, as a new and better order of things was introduced by the British government. Burnes saw the earthquake as the "hand of Providence."[4] James MacMurdo, colonial representative in Anjar, ran for open ground. Later, as he wandered the ruins, he observed that half of the town, which is situated in low rocky ridges, suffered comparatively nothing; whilst the other half, upon a slope leading to a plain of springs and swamps, was entirely overturned.[5]

MacMurdo, who clearly had an exceptional understanding of the region, also remarked that there was no tradition of an earthquake of any violence having previously occurred: "The natives, therefore, were perfect strangers to such a phenomenon, and were terrified in proportion to their ignorance."[6] In 1819, just to be clear, it seemed to MacMurdo and others that previous earthquakes had been forgotten. In a sense, each earthquake was a new thing.

After the earthquake of 2001, there was a new interest in the older disaster. The tragedy of 184 dead children led people to wonder why Anjar was a site of such repeated misfortune. There was also memory of another earthquake in the same location in 1956. Then too, most deaths occurred on the same slopes of the town, just as they had done in 1819.

In 1956, Nehru visited to offer cheer and condolence. He addressed a large crowd: "This and other natural disasters should not dishearten people. They should attempt at utilising the occasion, good or bad, to bring about some good results. The deaths and

4 James Burnes, *Sketch of the History of Cutch from Its First Connexion with the British Government in India to the Conclusion of the Treaty of 1819* (New Delhi: Asian Education Services, 2004), 66. First published in 1829.

5 James MacMurdo, "Papers Relating to the Earthquake Which Occurred in India in 1819," *Transactions of the Literary Society of Bombay* 3 (1820): 90–116.

6 MacMurdo, "Papers," 112.

destruction were a matter of great sorrow. However, the sufferers should rebuild the devastated areas themselves and in a better way. Make them better places to live in."[7] It was determined that a new Anjar would be built to the west of the old one. Nehru himself laid the foundation stone and the settlement flourished. It was reasoned that the old town was built on dangerous ground. Despite the dangers, the old Anjar also prospered, becoming the town's principal and busiest bazaar.

After the 2001 earthquake, there were protests in Anjar. People wrote letters in blood and went on hunger strike to prevent rebuilding on the same site. The protesters wanted the government to intervene and to prohibit reconstruction. At first, these protests were large, but gradually fizzled out as compensation schemes and the routines of daily life took over. There was also scientific disagreement about the safety of Anjar, which cannot have aided clear thinking.

One team of scientists concluded: the 2001 event was simply one earthquake too many for the old city, and the difference in damage when compared with neighboring sectors is not an indication of a higher intensity of earthquake impact in the old city.[8] According to them, buildings collapsed because they were old and poorly constructed, not because they stood on a vulnerable spot. According to another team, the patterns of seismic motion had most probably been determined by the "site effect" of Anjar: the shape of the land and conditions of underlying soil.[9] Hence, they concluded that besides the poor-quality buildings, "site effects" (lake-like sediment) also contributed to the collapse of part of Anjar.

Over the years since 2001, first bulldozers, then planners and engineers, and finally family and commercial life returned to the tragic spot.[10] Today, there remain some empty building plots, but the number is only decreasing and Anjar again flourishes in the aftermath of an earthquake.

7 "Mr. Nehru Visits Anjar Town: Quake Victims Assured Permanent Resettlement," *Times of India*, 19 August 1956, 1; "Opposition Parties Fomenting Trouble: Mr. Nehru's Charge: Call to Eschew Violence," *Times of India*, 20 August 1956, 1.

8 Jean-Luc Chatelain, Bertrand Guiller, and Imtiyaz A. Parvez, "False Site Effects: The Anjar Case, Following the 2001 Bhuj (India) Earthquake," *Seismological Research Letters* 79, no. 6 (2008): 816–19.

9 B. K. Rastogi, A. P. Singh, B. Sairam, S. K. Jain, F. Kaneko, S. Segawa, and J. Matsuo, "The Possibility of Site Effects: The Anjar Case, Following Past Earthquakes in Gujarat, India," *Seismological Research Letters* 82, no. 1 (2011): 59–68.

10 I documented this in a photographic project between 2002 and 2011. A selection of these images appears in Simpson, *The Political Biography of an Earthquake*.

Vikas Lakhani and Eveline de Smalen

Recommendations for Policymakers

Drawing on the lessons presented in the papers contained in this volume, there are three recommendations we want to make to policymakers concerned with environmental and disaster-related regulation. We argue that these present an opportunity to make policies more inclusive of the diverse groups in contemporary European society, innovative in the solutions they present, and reflective on the complexity of the challenges that face the European community today.

Recommendation 1: Acknowledge the existence and relevance of counternarratives

Many different memories exist regarding conservation and restoration practices, as well as disaster management, and policymakers must be careful not to negate the multiplicity of narratives. The relevance of memories—reflecting both dominant narratives and various counternarratives—that exist, especially amongst less vocal citizens, should be acknowledged and incorporated in policymaking. Doing so can reduce existing vulnerabilities and avoid the creation of new vulnerabilities. Also, it will make for more sustainable policies that are acceptable to communities, and therefore more effective. Policies that recognize counternarratives will be more inclusive and enhance social cohesion, while also achieving better results in preserving critical heritage and preparing for disasters.

For case studies elaborating on this recommendation, see Bolton, Colten and Grismore, Farjon, Fredriksson et al, Goodbody, LaRocco, and Sutherland.

Recommendation 2: Utilize citizens' memories as a source of local knowledge

Memories of citizens can provide a source of knowledge that is unavailable to policymakers by means of science or other institutionalized sources of knowledge. They should be acknowledged as vital sources of information for mitigation strategies in restoration and conservation practices, as well as in disaster management. Engaging with

these sources enhances the transmission of heritage and enables social innovation. Recognizing and using memory as a source of knowledge makes for innovative policy-making that can be more effective in its mitigating force, while also serving to legitimize people's experiences, and thereby legitimizing policy for the public.

Creating instruments to engage community would identify the value of resources used by the people.

For case studies elaborating on this recommendation, see Bolton, Fredriksson et al., LaRocco, and Sutherland.

Recommendation 3: Support resilience in communities by recognizing the role of both remembering and forgetting

Resilient communities must balance practices of remembering and forgetting. Forgetting can occur both actively and passively, be led by different stakeholders in both the public and private sector, and be both benign or malign both in practice and in effect. While forgetting can be a means to move forward after a disaster, it can also obstruct prevention and mitigation if the lessons learned are lost and not translated into risk-reduction strategies. To support the formation and continuation of resilient communities, policymakers should recognize the different ways in which remembering and forgetting occur in societies, and be aware of their various implications. Recognizing these processes of forgetting makes for policy that is more reflective of the complexity of issues for different stakeholders, and can, in this way, be more effective in enhancing resilience.

For case studies elaborating on this recommendation, see Baez Ullberg, Colten and Grismore, Fredriksson et al., Parrinello, Simpson, Sutherland.

About the Authors

Susann Baez Ullberg is associate senior lecturer at in Cultural Anthropology at the University of Uppsala, Sweden.

Chris Bolton is Principal Specialist for Landscape at Natural England, UK.

Craig E. Colten is Carl O. Sauer Professor in in the Department of Geography and Anthropology at the Louisiana State University in Baton Rouge, USA. He wrote this article together with Audrey M. Grismore, who is a graduate student in geography at the Louisiana State University.

Hans Farjon, Ed Dammers & **Henk van Zeijts** are policy advisors at PBL Netherlands Environmental Assessment Agency, The Hague, The Netherlands.

Caroline Fredriksson is a doctoral student in coastal engineering at Lund University in Sweden. Her co-authors are Grit Martinez (Ecologic Institut, Berlin), Magnus Larson (Professor of Water Resources Engineering, Lund University), and Beate Feldmann (National Library of Sweden).

Axel Goodbody is Emeritus Professor of German and European Culture at the University of Bath, UK.

Annette A. LaRocco is assistant professor of political science at Florida Atlantic University, USA.

Vikas Lakhani is a Marie Skłodowska-Curie Early-Stage Researcher at the Rachel Carson Center for Environment & Society at LMU Munich.

Giacomo Parrinello is assistant professor of environmental history at the Centre d'histoire de Sciences Po in Paris, France.

Edward Simpson is professor of social anthropology and director of the SOAS South Asia Institute at the School for Oriental and African Studies, University of London, UK.

Eveline de Smalen is a Marie Skłodowska-Curie Early-Stage Researcher at the Rachel Carson Center for Environment & Society at LMU Munich.

Colin R. Sutherland is a PhD candidate in the Department of Geography at York University in Toronto, Canada.

RCC Perspectives

perspectives@carsoncenter.lmu.de

Rachel Carson Center for Environment and Society
LMU Munich
Leopoldstrasse 11a
80802 Munich
GERMANY

www.rachelcarsoncenter.org

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