

## ABSTRACT

Title of Dissertation: ARCHIVAL WORKERS AS CLIMATE ADVOCATES

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Real-life examples of climate response under material constraints capture the risks facing archives, records, and archival workers amid environmental change, and the factors that complicate climate action. In this dissertation, I sought to understand how climate, environment, and ecology shape archival workers' experiences, practices, and perspectives on the future, including their norms and expectations for making change. I used three interconnected methods: a critical review of six decades of scholarly and professional literature; a literary analysis of archival practices in seven climate fiction texts; and interviews with 13 archivists concerned about climate change. The core argument of this dissertation is that forms of slow violence – Nixon's term for harm that “occurs gradually and out of sight” – produce unresolvable double binds, which catalyze archival workers into a community of climate advocates.

This research finds that archival workers are trying to pursue principled work in conditions that prevent them from doing so – not only the material limitations of work sites, but also political obstacles to taking climate action. They develop politically expedient strategies and

tactics in response to local circumstances, while using public statements and campaigns to extend their advocacy across the field. As climate advocates, they oscillate between positions as insiders and outsiders in the field, never settling in one stance from which to effect change. While they share a commitment that archives matter to climate response, complexity and contradiction hold them together as a community of advocates. Two key points of disagreement lie at the buzzing center of this community: first, whether archives are primarily resources or obstacles to climate action; and second, to what extent archival climate responses should align with or resist power relations that organize the state of the field (and the planet).

There's ample knowledge in the archives field of the significance of climate change, the environmental impacts to and of archival work, the need for archivists to respond to the crisis, and methods for responding. However, such answers make little difference in everyday change-making, if they don't also face head-on the material conditions of archival work and the political relations that determine and reproduce those conditions.

ARCHIVAL WORKERS AS CLIMATE ADVOCATES

by

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## Acknowledgments

### University of Maryland land acknowledgment:

Every community owes its existence and strength to the generations before them, around the world, who contributed their hopes, dreams, and energy into making the history that led to this moment. Truth and acknowledgment are critical in building mutual respect and connections across all barriers of heritage and difference. So, we acknowledge the truth that is often buried: We are on the ancestral lands of the Piscataway People, who are the ancestral stewards of this sacred land. It is their historical responsibility to advocate for the four-legged, the winged, those that crawl and those that swim. They remind us that clean air and pristine waterways are essential to all life. This Land Acknowledgment is a vocal reminder for each of us as two-leggeds to ensure our physical environment is in better condition than what we inherited, for the health and prosperity of future generations.

~ ~ ~ ~ ~

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# 1. Slow violence, double binds, and enunciatory communities: Framing the problem

## 1.1. Introduction

A collection manager in Appalachia must identify the exact boxes she'll carry out of the archives building with her in case of emergency. Archives storage spaces have flooded before, and she wants to be prepared next time. The collections she's choosing between include the only remaining copies of building plans from across the country; in many cases, both the buildings and the other copies of their records have been damaged in California wildfires.<sup>1</sup>

A state archives in the United States' Mountain West floods due to a pipe leak in cold weather.<sup>2</sup> Its fewer than 10 FTE staff must identify what can be salvaged and take swift steps to save it while maintaining their own health and safety.<sup>3</sup> They may be experiencing primary or secondary trauma related to the disaster.<sup>4</sup> Calling on other area archives for help is complicated because the state archives doesn't participate in regional emergency preparation and response networks.<sup>5</sup>

An archivist working out of a LEED-certified library building is speaking with an archivist based on a reservation in the U.S. Southwest. The tribal archivist wonders how to implement preservation best practices when his facility doesn't have a heating, ventilation, and air conditioning (HVAC) system. The region where they're based is projected to grow hotter over the next two decades, challenging the capacity to maintain stable storage conditions that are cool enough for records.<sup>6</sup> Both archivists are convinced that standards and best practices should reflect the actual conditions they work in.<sup>7</sup>

An organization in the Northeast U.S. employs one archivist, who monitors sensors and reports environmental conditions for the building that houses the archives. Keeping a consistent eye on the readings is especially important given the building's

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1 Samantha Winn, interview with the author, September 28, 2020.

2 Andrew Kenney, "2,000 Boxes of Colorado Archives Documents to Be Checked for Damage after Multiple Pipes Leak," Colorado Public Radio, December 27, 2022, <https://www.cpr.org/2022/12/27/colorado-archives-water-leak/>.

3 "The State of State Records: A Statistical Report on State Archives and Records Management Programs in the United States" (Frankfort, KY: Council of State Archivists, 2021), <https://www.statearchivists.org/viewdocument/2021-the-state-of-state-records-a>.

4 Roger Craig, Tamara Selzer, and Josette Seymour, "There Is Disaster Planning and There Is Reality—the Cayman Islands National Archive (CINA) Experience with Hurricane Ivan," *Journal of the Society of Archivists* 27, no. 2 (2006): 187–99, <https://doi.org/10.1080/00379810601081396>.

5 Council of State Archivists, "State of State Records," D32.

6 U.S. Global Change Research Program, "Climate Mapping for Resilience and Adaptation Assessment Tool," n.d., <https://livingatlas.arcgis.com/assessment-tool/home/>.

7 Anonymous interview participant, interview with the author, June 22, 2020.

coastal location but, early in the COVID-19 pandemic, the organization furloughs the archivist for months. An upcoming renovation can account for neither the archival collections nor climate-related needs if the only internal expert on both topics is not at the planning table.<sup>8</sup>

An archives of Black diaspora moves from one region and institutional home to another, currently located in a low-lying area of a coastal city in the Southeast U.S.<sup>9</sup> Founded and developed in historically Black colleges and universities (HBCUs), the archives garners strong interest from predominantly white institutions (PWIs) as its collections and reputation grow. Like many HBCU-affiliated archives, this repository faces pressure to partner with PWIs but can't rely on those partners to respect its autonomy.<sup>10</sup> The head of the archives knows from experience how climate-related disasters threaten the records of people, organizations, and entire movements. Archives staff accept responsibility for such records even as their own organization and livelihoods face many of the same climate risks.

These real-life examples capture many of the risks facing archives, records, and archival workers amid climate change, as well as the factors complicating climate response. In this dissertation, I sought to understand how climate, ecology, and environment shape archives and records workers' experiences, practices, and perspectives on the future, in order to identify directions for climate action in the archives field. I investigated these topics with a critical review of scholarly and professional literature, analysis of climate fiction texts, and interview study.

Two theoretical frameworks have informed this project along the way. First, I argue that we can understand both the impacts of climate change and what is happening in, to, and through archival work as forms of “slow violence,” or harm that “occurs gradually and out of sight.”<sup>11</sup> Second, in eliciting perspectives and experiences of archival workers concerned with climate, environment, and ecological matters in their work, I've come to see them as an “enunciatory

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8 Anonymous interview participant, interview with the author, June 23, 2020.

9 Christopher Harter and Patrick Rasico, “File soon. June, 1987”: Archival Diasporas and the Urgency to Save During a Climate Emergency, interview by Petrouchka Moise and Laura Wilson, Podcast, 53:46, May 6, 2022, FLAME (Future Libraries, Archives, and Museums in Excavation), <https://open.spotify.com/episode/2x5LAFk2NwvuNh9iPUSIGg>.

10 Sandra Phoenix and Monika Rhue, S3 E1: Our Ancestors' Wildest Dreams, interview by Sharon M. Burney, Podcast, 31:44, March 21, 2022, Material Memory, <https://material-memory.clir.org/s3-e1-our-ancestors-wildest-dreams/>.

11 Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011), 2.

community”: connected less by shared interests or goals than by the seemingly unresolvable “double binds” in which they find themselves, to which they respond through advocacy.

Discussions of archives, records, and climate/environmental matters in the professional and scholarly literature address eight interrelated activities: curating climate records, using records, designing technical systems, evaluating archival work, doing archival politics, recognizing multiple ways of knowing, doing archives differently, and recovering from and responding to climate disaster. Curating climate records includes activities like creating, collecting, and managing material from data to historical records to seeds. Using records includes identifying sources for climate research, contesting access to environmental records and data, and finding environment-related uses for records. Designing technical systems around climate concerns addresses energy reduction in buildings, systems, storage environments, and supply chains, with flexible standards as a key mechanism. The literature includes many accounts of evaluating archival work, such as records management practices, management of climate records, climate risks to archives, disaster preparedness, and environmental impacts. Readers confront archival politics like the role of archives in causing harm, contending the purpose of archives, and political activism around climate records and climate response. Studying archives and climate leads to recognizing multiple ways of knowing. Actually doing archival work differently would entail building networks for disaster planning and information sharing, or organizing archives around (for example) another sense of time or relationship to land. Insights drawn from experiencing disaster offer concrete lessons, like the steps and challenges involved in recovery, and insistence on archives being part of any large-scale climate response.

A study of archival practices in seven climate fiction narratives illustrates how slow violence exacerbates climate crisis and its impacts. Climate change and resulting social reorganizations

each force people to change how they relate to land. As people improvise practices to survive under these conditions, emerging social formations use counter-surveillance tactics like avoiding documentation and destroying records. On the other hand, creating and keeping records can also help people endure rapid change by making sense of what's happening or accessing resources. Climate novels offer instances of highly relational archive and memory keeping, from which archival workers may draw lessons in collectivity. Finally, characters use flexible tactics to resist slow violence. Each of the above suggests possible paths for archival workers to contribute: fighting information enclosures, performing emergency record keeping, acknowledging relationality and multiple knowledges, and building collectives to resist slow violence. Although archives and records practices can perpetuate slow violence and trap people in inescapable double binds, they can also undergird methods for long-term resistance and recovery.

Through an interview study with 13 archival workers involved in a variety of climate actions in the field, I learned that slow violence manifests through widespread problems with archival working conditions and inequitable resource allocation among archives. The competing demands to pursue a principled practice while operating within resource and political constraints constitute a double bind for archival workers. A second set of conflicting injunctions lies in participants' oscillating positioning as insiders or outsiders in the archives field, and the forms of power that each positioning affords. Interviewees agree on the urgency of climate action in the archives field. Building theory from experience – of working in archives, and of living through disaster – they develop a concept of how change happens in the archives field, in the process of pursuing climate action. In several areas, such as waste/energy use and appraisal, they've used politically expedient strategies to effect local change.

## 1.2. Slow violence

“Slow violence” is Nixon’s term for resource extraction, environmental damage, and displacement that accompany and result from globalization. It’s “a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all.”<sup>12</sup> It’s difficult to represent slow violence and those who suffer from it. I chose to ground this project in the concept of slow violence for several reasons. First, I’m interested in the extent to which archivists’ experiences, practices, and perspectives relate to the ravages of resource extraction and its causes. How do archival workers and their practices give shape to the full scope of slow violence and make it representable? “Slow violence” is an appropriate framework to explore the capacity of archives and records to tell stories about long-term environmental damage. Second, the notion of hidden, attenuated, accumulating, and hard-to-see violence is an archival one. I mean this less in terms of the “dusty old archives” trope than in reference to archives’ association with marginalization, silence, and the colonial and imperial logics that organize archival theory and practice.<sup>13</sup> Slow violence, like archival work, is about conflicting ways of organizing time, beginning with archiving and record keeping that supported colonial imaginaries by segmenting and classifying people, land, and things. Using permanence, long-term preservation, and imagined future users as points of reference for archival work each institutionalizes narrow definitions of records and preservation, while locking repositories into a model of growth as the only good.<sup>14</sup> Furthermore, as Sutherland writes in the U.S. context, “strict adherence to the materiality of records, the de-

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12 Nixon, *Slow Violence*, 2.

13 J. J. Ghaddar and Michelle Caswell, “‘To Go Beyond’: Towards a Decolonial Archival Praxis,” *Archival Science* 19, no. 2 (June 2019): 71–85, <https://doi.org/10.1007/s10502-019-09311-1>.

14 James M. O’Toole, “On the Idea of Permanence,” *The American Archivist* 52, no. 1 (Winter 1989): 10–25, <https://doi.org/10.17723/aarc.52.1.3x85283576r43387>; Tonia Sutherland, “Archival Amnesty: In Search of Black American Transitional and Restorative Justice,” *Journal of Critical Library and Information Studies* 1, no. 2: *Critical Archival Studies* (2017): 1–23, <https://doi.org/10.24242/jclis.v1i2.42>.

legitimization of alternate forms of recordkeeping, and the standards of permanence inevitably leads to oblivion; those records that resist traditional American archivy are relegated to the discarded past, unable to be resurrected and used to support claims of human rights abuses.”<sup>15</sup>

### 1.2.1. Defining slow violence

Time, speed, and displacement characterize and make it difficult to see slow violence, which entails dispossession, widening inequality, and “ecological degradation” amid globalization.<sup>16</sup>

The gradual erosion of environments and human rights makes for “imperceptible violence” and “imperceptible change whereby violence is decoupled from its original causes by the workings of time.”<sup>17</sup> Such long-term damage may be invisible amid the Anthropocene’s “high-speed planetary modification” and simultaneous “rapid modifications to the human cortex” that affect people's capacities to pay attention.<sup>18</sup> The speed and endless flexibility that transnational corporations pursue contrasts with the “slow erosions of environmental justice.”<sup>19</sup> Slow violence brings people into conflict through incompatible forms of time: “a clash of temporal perspectives between the short-termers who arrive (with their official landscape maps) to extract, despoil, and depart and the long-termers who must live inside the ecological aftermath and must therefore weigh wealth differently in time’s scales.”<sup>20</sup> For instance, the oil industry thrives on “borrowed time” by exploiting deposits of the past in ways that foreshorten possibilities for the future.<sup>21</sup>

Slow violence encompasses many forms of displacement. Nixon defines these as linked processes of environmental extraction, physical eviction, and “administered invisibility” –

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15 Sutherland, “Archival Amnesty,” 14.

16 Nixon, *Slow Violence*, 46.

17 Nixon, *Slow Violence*, 11.

18 Nixon, *Slow Violence*, 12.

19 Nixon, *Slow Violence*, 8.

20 Nixon, *Slow Violence*, 17.

21 Nixon, *Slow Violence*, 69.

including both rhetorical and records-based strategies that deny people their rights.<sup>22</sup> Although many forms of slow violence have to do with forced mobility – as in the example of Indian mega-dams displacing thousands – there are also instances of “unnatural boundaries” that actually impose immobility, for example by making “transfrontier” people vulnerable to exclusion and statelessness at any time.<sup>23</sup> Slow violence not only displaces people from land but also displaces risk from powerful entities, Nixon argues. Through neoliberal globalization, transnational corporations offload risk onto poor people by exploiting deregulation, benefiting from how “laws and loopholes are selectively applied,” and using “free market ideology” as cover.<sup>24</sup> Risk displacement also happens through the creation of “disposable people,” such as dispossessed locals and “pliable” migrant workers whom corporations and states import to perform resource extraction.<sup>25</sup> Importantly for an archival studies project, displacement also threatens people with forgetting and loss, for instance the way “places are rendered irretrievable to those who once inhabited them.”<sup>26</sup> People become unable to remain in place, or trapped in places that are eroding around them or are polluted with the detritus of war. “Irretrievable” places are those in which long-term inhabitants can no longer survive, thanks to changes wrought by temporary newcomers. Struggling against this loss of memory and livelihood, Nixon writes, catalyzes poor people’s environmentalism.

### **1.2.2. Representing slow violence**

Slow violence resists representation or “standing for” in two senses: depiction or reproduction, as in literature, and in terms of political recognition. One reason is scale. Slow

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22 Nixon, *Slow Violence*, 151.

23 Nixon, *Slow Violence*, 195, 196.

24 Nixon, *Slow Violence*, 46.

25 Nixon, *Slow Violence*, 71.

26 Nixon, *Slow Violence*, 7.

violence is administered from afar, but it affects bodies at the cellular level. The sheer scope of inequality, displacement, distance, and “a huge chorus of disenfranchised voices” can make the task of representation impossible.<sup>27</sup> Nixon refers to slow violence as “attritional catastrophes that overflow clear boundaries in time and space,” arguing that they can be imperceptible and all-encompassing at once.<sup>28</sup> Temporal scale matters too: sustained attention over time is necessary to perceive changes that are due to slow violence; they may go unnoticed if effects are delayed.

Furthermore, environmental disaster and its long aftermath are hard to represent thanks to unstable standards for what's legible as a crisis. The “illusion of the singular event” makes it easier not to see immiseration and environmental degradation as a pattern.<sup>29</sup> There's also a category Nixon calls “administered invisibility,” which includes statistical measures of impact that fail to account for all of the people involved, and incalculable displacements that simply overwhelms record keeping efforts.<sup>30</sup>

Like statistical devices, narrative devices can also conceal slow violence. For example, “military euphemism,” such as the use of surgical metaphors, makes technologies of war seem precise when they aren't.<sup>31</sup> Stories of slow violence and oil extraction compete with frontier narratives, triumphalist notions of “linear development,” and fantasies about mineral strikes and instant success.<sup>32</sup> In the case of huge projects like dam-building, the circumstances of developmental refugees are difficult to capture amid “celebratory rhetoric,” nationalist “technological sublime,” and spectacle.<sup>33</sup> Images of charismatic mega-fauna in an imagined bush landscape, the Western desire for “an ancient African ferocity,” and “elegiac narratives” about

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27 Nixon, *Slow Violence*, 74.

28 Nixon, *Slow Violence*, 7.

29 Nixon, *Slow Violence*, 51.

30 Nixon, *Slow Violence*, 151.

31 Nixon, *Slow Violence*, 200.

32 Nixon, *Slow Violence*, 82, 71.

33 Nixon, *Slow Violence*, 158-60.

the decline of species all push aside the struggles of people who suffer when ecotourism and big game reserves only bring more fencing, more surveillance.<sup>34</sup> Each of the above narratives also figures in archives literature, from techno-utopian discourses about archival futures, to the popular metaphor of biodiversity as an Alexandrian Library of life.<sup>35</sup> Mass movements of poor people struggle to be understood amid these competing, dominating imaginaries. Their stories of slow violence, translated from oral cultures into novels or from collective experience into memoir, can seem “unplaceable” and disappear from public attention as a result.<sup>36</sup> Archives too have long been ill-suited to representing memory and knowledge relevant to oral, embodied, and collective traditions and mass social movements.<sup>37</sup>

Nixon studies slow violence and how to resist it by analyzing “the political, imaginative, and strategic role of environmental writer-activists.”<sup>38</sup> Subjects of the book embody multiple stances and relationships to movement politics and organized resistance, such as one who turned to writing after years of intense involvement in movements, “not as a means of escape but of confrontation.”<sup>39</sup> There may be comparable links between archival advocacy and movement politics. In choosing the works, lives, and politics of writer-activists for subjects, Nixon acknowledges that “to address violence discounted by dominant structures of apprehension is necessarily to engage the culturally variable issue of who counts as a witness.”<sup>40</sup> Witness,

34 Nixon, *Slow Violence*, 179, 191.

35 Gordon M. Sayre, “The Alexandrian Library of Life: A Flawed Metaphor for Biodiversity,” *Environmental Humanities* 9, no. 2 (November 2017): 280–99, <https://doi.org/10.1215/22011919-4215238>; Eira Tansey, “Review of *Archival Futures*,” *Journal of Contemporary Archival Studies* 6 (2019): Article 17; Mél Hogan and Sarah T. Roberts, “Archiving for Extinction,” *Media-N* 19, no. 1: Afterlives of Data (Spring 2023): 7–26, <https://doi.org/10.21900/j.median.v19i1.936>.

36 Nixon, *Slow Violence*, 111.

37 Donald L. Fixico, “The Native American Researcher: Another View of Historical Documents,” *The Midwestern Archivist* 8, no. 2 (1983): 5–15; Lynnette Russell, “Indigenous Knowledge and Archives: Accessing Hidden History and Understandings,” *Australian Academic & Research Libraries* 36, no. 2 (2005): 161–71; Nora Almeida and Jen Hoyer, “The Living Archive in the Anthropocene,” *Journal of Critical Library and Information Studies* 3, no. 1: Libraries and Archives in the Anthropocene (2020), <https://doi.org/10.24242/jclis.v3i1.96>.

38 Nixon, *Slow Violence*, 15.

39 Nixon, *Slow Violence*, 78.

40 Nixon, *Slow Violence*, 16.

counting, conflict, and seeing are each relevant to archival work; climate change and its impacts shape their place in day-to-day practice.

### 1.2.3. Slow violence, archives, and records

Examples from archival literature on climate and environment illustrate how record keeping facilitates the forms of displacement associated with slow violence. In a study of the record keeping practices behind two major environmental disasters, Tansey describes how a federally mandated environmental impact form provided the oil company BP with a sanctioned means to fabricate information.<sup>41</sup> This set the stage for failures of post-disaster recovery following the 2010 Deepwater Horizon oil spill. Records mismanagement and agency capture each defy charismatic representation, but they're part of the slow violence visited on communities surrounding the Gulf of Mexico. Nixon foresees that climate crisis will intensify military-industrial responses, such as “wall[ing] off the wealthy”; exploring, drilling, and claiming land further and further under the ocean; and “heightened corporate mobility” through which corporate responsibility disappears in mergers and subcontracting.<sup>42</sup> Tansey’s research suggests that record keeping will play a role in each of these futures but won’t necessarily serve transparency or accountability.

Archives and records can themselves function as mechanisms of displacement. In a paper explicitly connecting archival practices to slow violence, Bell describes the situation of the indigenous I’ai community in Papua New Guinea’s Purari Delta.<sup>43</sup> Amid incursions by logging and gas companies, I’ai have relied on archival records such as “land leases, health, fisheries,

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41 Eira Tansey, “Regulatory Recordkeeping, Worker Safety, and United States Extractive Industries,” *The Extractive Industries and Society* 7, no. 1 (January 2020): 209–16, <https://doi.org/10.1016/j.exis.2020.01.010>.

42 Nixon, *Slow Violence*, 265, 270.

43 Joshua A. Bell, “Dystopian Realities and Archival Dreams in the Purari Delta of Papua New Guinea,” *Social Anthropology/Anthropologie Sociale* 24, no. 1 Special Issue: Utopian Archives, Decolonial Affordances (February 2016): 20–35, <https://doi.org/10.1111/1469-8676.12285>.

forestry, foreign researchers, and oil and mineral exploration records dating from the late 1960s to the present” to support their resource rights claims.<sup>44</sup> Specifically, records allow them to make types of claims that government and transnational corporations would recognize. However, the decline of archives through abandonment and arson places these records and claims out of reach. In this example, a records regime helps to disenfranchise and trap Indigenous people in place.

Drake’s study of the 2005 Danziger Bridge shooting in New Orleans previews the role archives and records are likely to continue playing as climate change leads to floods, mass migration, and militaristic responses.<sup>45</sup> One week after Hurricane Katrina made landfall, “a team of seven New Orleans Police Department officers and one St. Landry’s Parish Deputy Sheriff shot six civilians, leaving two of them dead and the other four seriously wounded.”<sup>46</sup> In an act of what Drake calls “instant manufacture” of records, a police report distorted and omitted details of the situation.<sup>47</sup> Climate crisis will continue to offer cover to representatives of the state for fabricating records, thereby undermining accountability for human rights abuses. Investigators in the 2005 case cited “law and order” values and conditions of “chaos and confusion” to exonerate police; the record keeping rules allowed such narratives to dominate proceedings around police brutality in a disaster situation.<sup>48</sup> Drake’s study acknowledges how “non-state actors and the records they generate as victims’ advocates serve a historical as well as judicial accountability.”<sup>49</sup>

Given myriad examples of time understood to be cyclical, entangled, backwards, and otherwise nonlinear, Caswell notes the violence that archival organization does in presuming a

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44 Bell, “Dystopian Realities,” 21.

45 Jarrett M. Drake, “Insurgent Citizens: The Manufacture of Police Records in Post-Katrina New Orleans and Its Implications for Human Rights,” *Archival Science* 14, no. 3–4 (October 2014): 365–80, <https://doi.org/10.1007/s10502-014-9224-2>.

46 Drake, “Insurgent Citizens,” 370.

47 Drake, “Insurgent Citizens,” 375.

48 Drake, “Insurgent Citizens,” 371.

49 Drake, “Insurgent Citizens,” 367.

linear sense of time in which past, present, and future proceed separately and in that order.<sup>50</sup> Linear or progressive time affects people's lives through records regimes, as well as shaping representation in archives and collective memory. To document “traces of ongoing oppression” requires “shift[ing] the moment of archival responsibility, from a singular present to a multiplicity of uncertain pasts, presents, and futures” and “a different orientation to time.”<sup>51</sup> Caswell's concepts of “chronoviolence” and “urgent archives” resonate with elements of slow violence. Slow violence takes place over hyperattenuated linear time scales under control of global capital, which conflicts with how people experience time amid environmental destruction. Both Nixon and Caswell write about multiple senses of representation, from political power to how communities and their struggles appear in writing and records.

Climate change's impacts fall differently thanks to “the inequities between those who have grown rich off hydrocarbon culture and the predominantly poor people—from the Maldives to Niger—who are low-level hydrocarbon consumers but at greatest initial risk from the climate crisis.”<sup>52</sup> As displacement affects the latter first and most, public discourses in wealthy nations will continue to characterize climate refugees as floods, waves, surges, or flows – as seen, for instance, in recent U.S. moral panics about Central American migrants escaping violence and climate-related vulnerability. Such media representations epitomize slow violence by prioritizing a North Atlantic sensibility of threat, over the precarity of poor people in and from the global South.<sup>53</sup> The carceral structures that migrants encounter further victimize and make them

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50 Michelle Caswell, *Urgent Archives: Enacting Liberatory Memory Work* (London: Routledge, 2021).

51 Caswell, *Urgent Archives*, 26.

52 Nixon, *Slow Violence*, 266.

53 Trouillot uses the term “North Atlantic” to more precisely locate the heart of imperialism-colonialism-capitalism, and to argue for the continuity of 20th-century modernism and 20th/21st-century globalization with those preceding, world-altering systems: “Indeed, the place we most often call the West is best called the North Atlantic—not only for the sake of geographical precision but also because such usage frees us to emphasize that 'the West' is always a fiction, an exercise in global legitimation. That exercise sometimes takes the form of an explicit project in the hands of intellectual, economic, or political leaders. Yet most humans who see themselves as Westerners, aspire to become so, or criticize that aspiration experience the West in the form of a projection:

invisible through records practices.<sup>54</sup> Each of these archival connections to slow violence implicates archives and record keeping in forms of displacement, establishing the challenges that face archival workers organizing and taking action in response to climate change.

### 1.3. Enunciatory communities and double binds

To give shape to how I'll describe archivists' climate responses, I'll next turn to the framework of “enunciatory communities.” Fortun developed this concept as a way to characterize how different advocate formations and alignments came together in the aftermath of the 1984 Bhopal disaster.<sup>55</sup> As they make claims about harm, culpability, and restitution, participants in these formations also remember and continually recreate the disaster through remembering – thereby making truth claims about what happened when and why. Rather than forming through shared interests or goals, enunciatory communities manifest through how they make such claims:

In my account, stakeholder communities become 'enunciatory communities.' Some, like gas victims, are relatively tied to one locale; others are more dispersed and include corporate and government officials, medical and legal professionals, and environmental activists working at various tiers of regional, national, and transnational organizations. Like stakeholder communities, enunciatory communities often share certain interests. But they do not necessarily think in the same way about what those interests mean or about how those interests can be protected. Sometimes shared interest is not even what holds an enunciatory community together.<sup>56</sup>

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the projection of the North Atlantic as the sole legitimate site for the universal, the default category, the unmarked—so to speak—of all human possibilities.” As Ghaddar demonstrates, contemporary archival standards, practices, and politics issue directly from this dynamic. Michel-Rolph Trouillot, *Global Transformations: Anthropology and the Modern World* (New York: Palgrave Macmillan, 2003), 1-2; J. J. Ghaddar, “Provenance in Place: Crafting the Vienna Convention for Global Decolonization and Archival Repatriation,” in *Disputed Archival Heritage*, ed. James Lowry (London: Routledge, 2023), 49–86.

54 Jennifer Hale Eagle, “‘I Want Them to Know We Suffer Here’: Preserving Records of Migrant Detention in Opposition to Racialized Immigration Enforcement Structures,” *Journal of Radical Librarianship* 5 (2019), <https://journal.radicallibrarianship.org/index.php/journal/article/view/32>.

55 This refers to a massive industrial disaster originating at a Union Carbide chemical plant in Bhopal, India. Fortun's study maps the complex and ongoing contests and conflicts, among many parties, over the origins, scope, scale, and implications of the disaster and what came after. Kim Fortun, *Advocacy After Bhopal: Environmentalism, Disaster, New Global Orders* (Chicago: University of Chicago Press, 2001).

56 Fortun, *Advocacy After Bhopal*, 11.

Enunciatory communities are “assumed to be fissured within, even when members themselves insist otherwise,” and cannot either persist across time and space or “devolve into benign pluralism.”<sup>57</sup> Fortun's definition of advocacy – “a performance of ethics in anticipation of the future” – contains within it the need for enunciatory communities and their activism to always be changing, as the future they anticipate shifts and morphs, coming closer and getting further away.<sup>58</sup>

Fortun further distinguishes enunciatory communities from groups that share ways of analyzing and responding to problems (“epistemic communities”) or that share languages and ways of knowing (“interpretive communities”). This is because, she argues, what constitutes an enunciatory community is neither its way of making sense of circumstances nor its overall ordering of categories, meaning, and relevance.

Instead of locating enunciatory communities via indicators of interest or epistemological habit, I have focused on fields of force and contradiction—on the double binds that position enunciatory communities within new world orders. These double binds are more than 'context' conventionally conceived. Enunciatory communities do not exist prior to the double bind, with which they deal according to an already coherent identity. Enunciatory communities are produced by double binds, which call into play both new and entrenched ways of engaging the world. The “identity” of enunciatory communities is strategically configured; collectivity is not a matter of shared values, interests, or even culture, but a response to temporally specific paradox.<sup>59</sup>

Enunciatory communities can contain – in fact, are expected to contain – conflicting epistemologies and interpretive frameworks; what constitutes them instead is a double bind.

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57 Fortun, *Advocacy After Bhopal*, 13.

58 Fortun, *Advocacy After Bhopal*, 16.

59 Fortun, *Advocacy After Bhopal*, 11.

### 1.3.1. Defining double binds

Given how many ways there are to use the phrase “double bind” (both colloquially and theoretically), I want to be as precise as possible about how I’m using the term, and how I understand different situations to be double binds. Fortun develops a sense of the term following Bateson et al., whose concept of a double bind is a circumstance involving:

1. two or more persons;
2. repeated experience;
3. a primary negative injunction;
4. “a secondary injunction conflicting with the first at a more abstract level”;
5. and “a tertiary negative injunction prohibiting the victim from escaping the field”<sup>60</sup>

Double binds can manifest as a “double burden” imposed by demands that can’t be reconciled.<sup>61</sup> Some prior work poses double binds as examples of existential challenges, in which ways of being or acting within a particular domain work in direct contradiction to the goals of the activity.<sup>62</sup> In one example that archival workers might recognize, Poirier notes how naming something erases part of it.<sup>63</sup> Hanna characterizes Fortun’s use of the double bind concept as a

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60 Bateson et al. use the term “victim” to refer to the person who’s the subject of contradictory communications, and who’s struggling with and unable to resolve the double bind. Gregory Bateson et al., “Toward a Theory of Schizophrenia,” in *Steps to an Ecology of Mind*, by Gregory Bateson, University of Chicago Press edition (Chicago: University of Chicago Press, 2000), 206-7.

61 Peter Mark Stephenson, “The Double Bind and the Double Burden: Implications for the Professional Education and Practice of Indigenous Environmental Health Practitioners” (PhD, University of Technology, Sydney, 2001), <https://eprints.batchelor.edu.au/id/eprint/305>.

62 Kim Fortun and Mike Fortun, “Scientific Imaginaries and Ethical Plateaus in Contemporary U.S. Toxicology,” *American Anthropologist* 107, no. 1 (March 2005): 43–54, <https://doi.org/10.1525/aa.2005.107.1.043>; Stacey A. Langwick, “Articulate(d) Bodies: Traditional Medicine in a Tanzanian Hospital,” *American Ethnologist* 35, no. 3 (August 2008): 428–39, <https://doi.org/10.1111/j.1548-1425.2008.00044.x>; Deana Jovanović, “Prosperous Pollutants: Bargaining with Risks and Forging Hopes in an Industrial Town in Eastern Serbia,” *Ethnos: Journal of Anthropology* 83, no. Issue 3: Economies of growth or ecologies of survival? (2018): 489–504, <https://doi.org/10.1080/00141844.2016.1169205>; Stacey A. Langwick, “A Politics of Habitability: Plants, Healing, and Sovereignty in a Toxic World,” *Cultural Anthropology* 33, no. 3 (August 2018): 415–43, <https://doi.org/10.14506/ca33.3.06>; Lindsay Poirier, “Knowledge Representation in Scruffy Worlds: An Ethnography of Semiotic Infrastructure Design Work” (PhD, Troy, NY, Rensselaer Polytechnic Institute, 2018), <https://hdl.handle.net/20.500.13015/2171>; Michael Lachney, Madison C. Allen, and Briana P. Green, “The Double Bind of Constructionism: A Case Study on the Barriers for Constructionist Learning in Pre-College Engineering Education” (ASEE’s Virtual Conference: At Home with Engineering Education, Virtual Conference, 2020), Paper ID #29179, <https://monolith.asee.org/public/conferences/172/papers/29179/view>; Shreyas Sreenath, “(Un)Making the Manual Scavenger: Caste, Contract, and Ecological Uncertainty in Bengaluru, India,” *American Ethnologist* 50, no. 3 (August 2023): 491–505, <https://doi.org/10.1111/amet.13202>.

63 Poirier, “Knowledge Representation.”

euphemism for “the precise mechanisms of state-corporate power.”<sup>64</sup> This is why, although Bateson's model was about communication and emotions, in studying archives and climate change we have to go beyond double binds as a matter of feelings or discourse and look at the material conditions that produce them, and that they produce.

Several studies emphasize the nature of double binds as problems that both catalyze and undermine advocates' strategies.<sup>65</sup> Double binds move people to make claims – for resources, to representation, and so on – and also characterize the process of making claims. Sometimes this looks like insisting on the legitimacy of a particular way of contending a case, in the face of an immovable system in which those methods and their content can't be recognized.<sup>66</sup> In fact, many prior works begin from the double bind of making claims in a context that can't acknowledge them. Putting forward certain demands might require that people make use of ideas or ways of articulating or pressing claims that are actually incompatible with how they understand the world.<sup>67</sup> This may mean advocating within two or more domains, simultaneously following the

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64 Bridget Corbett Hanna, “Toxic Relief: Science, Uncertainty, and Medicine after Bhopal” (PhD, Cambridge, MA, Harvard University, 2014), 43.

65 Britta Lundgren, “Health Politics, Solidarity and Social Justice: An Ethnography of Enunciatory Communities during and after the H1N1 Pandemic in Sweden,” *Ethnologia Europaea* 47, no. 2 (2017): 22–39; Ramey Arlen Moore, “Our Land Is Not Just Soil: Knowing, Feeling, and Doing Environmental Activism in the Arkansas Ozarks” (PhD, Fayetteville, AR, University of Arkansas, 2017), <https://scholarworks.uark.edu/etd/2560/>; Alex M. Nading, “Living in a Toxic World,” *Annual Review of Anthropology* 49 (October 2020): 209–24, <https://dx.doi.org/10.1146/annurev-anthro-010220-074557>; Kirsty Howey and Timothy Neale, “Divisible Governance: Making Gas-Fired Futures during Climate Collapse in Northern Australia,” *Science, Technology, & Human Values*, January 2022, 1–30, <https://doi.org/10.1177/01622439211072573>.

66 Peter C. Little, “Vapor Intrusion: The Political Ecology of an Emerging Environmental Health Concern,” *Human Organization* 72, no. 3 (Summer 2013): 121–31; Winifred Tate, “Proxy Citizenship and Transnational Advocacy: Colombian Activists from Putumayo to Washington, DC,” *American Ethnologist* 40, no. 1 (February 2013): 55–70, <https://doi.org/10.1111/amet.12005>; Peter C. Little, *Toxic Town: IBM, Pollution, and Industrial Risks* (New York: New York University Press, 2014); Peter C. Little, “New Toxics Uncertainty and the Complexity Politics of Emerging Vapor Intrusion Risk,” in *A Companion to the Anthropology of Environmental Health*, ed. Merrill Singer (Chichester, UK: Wiley Blackwell, 2016), 281–301; Anna Lora-Wainwright and Ajiang Chen, “China’s Cancer Villages: Contested Evidence and the Politics of Pollution,” in *A Companion to the Anthropology of Environmental Health*, ed. Merrill Singer (Chichester, UK: Wiley Blackwell, 2016), 396–416; Lucy Pei, Benedict Salazar Olgado, and Roderic Crooks, “Narrativity, Audience, Legitimacy: Data Practices of Community Organizers,” in *CHI EA '22: Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems* (CHI '22, New Orleans, LA: Association for Computing Machinery, 2022), Article No.: 328, <https://doi.org/10.1145/3491101.3519673>.

67 Lauren Leve, “‘Secularism Is a Human Right!’: Double-Binds of Buddhism, Democracy, and Identity in Nepal,”

often incompatible norms of each.<sup>68</sup> For example, Callison identifies a double bind in climate policy as how to make a science-based matter *matter* to lots of different people, and how to go beyond merely throwing more facts at them.<sup>69</sup> Howey and Neale look at how support for fracking gets rationalized at the same time that different actors acknowledge that it's bad for the environment.<sup>70</sup> Enunciations that call communities into being can be more than statements; they can also consist of overt and covert positions that hail interlocutors as insiders or outsiders.<sup>71</sup> Faruque characterizes enunciatory communities as the “development of solidarity, despite ongoing tensions and differences in basic goals.”<sup>72</sup> Callahan characterizes the concept as a “critique of forced consensus”; in other words, a critique of practices, not just of how they are represented.<sup>73</sup> This shapes how people relate to the past as activists, acting within crises and double binds that are now ordinary.<sup>74</sup>

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in *The Practice of Human Rights: Tracking Law between the Global and the Local*, ed. Mark Goodale and Sally Engle Merry (Cambridge: The practice of human rights : tracking law between the global and the local, 2007), 78–113; Lauren Fordyce, “Birthing the Diaspora: Technologies of Risk Among Haitians in South Florida” (PhD, University of Florida, 2008), <https://ufdc.ufl.edu/UFE0022044/00001/images>; Heather Tidrick, “‘Gadžology’ as Activism: What I Would Have Ethnography Do for East European Roma,” *Collaborative Anthropologies* 3 (2010): 121–31, <https://doi.org/10.1353/cla.2010.0012>; Teresa Angélica Velásquez, “Going Green: Sustainable Mining, Water, and the Remaking of Social Protest in Post-Neoliberal Ecuador” (PhD, Austin, TX, University of Texas at Austin, 2012), <http://hdl.handle.net/2152/19460>; Brian Robert Callahan, “Complexities of Collaboration: An Open Source Story” (PhD, Troy, NY, Rensselaer Polytechnic Institute, 2018), <https://hdl.handle.net/20.500.13015/2285>.

68 Jörg Friedrichs, “Peak Energy and Climate Change: The Double Bind of Post-Normal Science,” *Futures* 43 (2011): 469–77, <https://doi.org/10.1016/j.futures.2010.12.004>; Thomas Hylland Eriksen, *Boomtown: Runaway Globalisation on the Queensland Coast* (London: Pluto Press, 2018); Alex Nading and Lucy Lowe, “Social Justice as Epidemic Control: Two Latin American Case Studies,” *Medical Anthropology* 37, no. 6: Technologies and Materialities of Epidemic Control (2018): 458–71, <https://doi.org/10.1080/01459740.2018.1485021>.

69 Candis Callison, *How Climate Change Comes to Matter: The Communal Life of Facts* (Durham, NC: Duke University Press, 2014).

70 Howey and Neale, “Divisible Governance.”

71 Moore, “Our Land Is Not Just Soil.”

72 M. Omar Faruque, “Confronting Neoliberal Resource Policy: Mining Conflict and Coal Politics in Bangladesh,” in *Social Movements Contesting Natural Resource Development*, ed. John F. Devlin (New York: Routledge, 2020), 67.

73 Callahan, “Complexities of Collaboration.”

74 Amy Levine, *South Korean Civil Movement Organisations: Hope, Crisis, and Pragmatism in Democratic Transition* (Manchester: Manchester University Press, 2016).

Although my dissertation is about archival workers advocating about climate change – or more broadly, archival work and/as climate response, including advocacy – archivists often align with the position of receiving, administering, and acknowledging claims. Prior work on double binds in the administration of claims is relevant here. One often-cited instance of a double bind finds subjects oscillating between the financial well-being of service organizations and the well-being of constituent individuals, communities, and environments.<sup>75</sup> Not doing harm is on an equal footing with protecting the bottom line. Providing services is on an equal footing with satisfying funders that services are being provided. Many archives and archival workers operate along exactly these lines, either directly or in carrying out the decisions of parent organizations. Prior works also highlight the ideological apparatuses that produce double binds in administering claims.<sup>76</sup> In one example, state obsession with technoscientific expertise limits climate response in Guyana to what can be determined within the bounds of technoscience.<sup>77</sup> Similarly and circularly, climate response within the archives field may end up being limited to what archival workers already consider to fall within the bounds of archival work. Given the academic capture

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75 Eriksen, *Boomtown*; Erica Caple James, *Democratic Insecurities: Violence, Trauma, and Intervention in Haiti* (Berkeley, CA: University of California Press, 2010); Paul Jobin, “‘Nuclear Gypsies’ in Fukushima before and after 3/11,” in *Nuclear Portraits: Communities, the Environment, and Public Policy*, ed. Laurel Sefton MacDowell (Toronto, ON: University of Toronto Press, 2017), 274–311; Katherine Venter, Denise Currie, and Martin McCracken, “‘You Can’t Win’: The Non-Profit Double-Bind and Experiences of Organisational Contradictions in the Non-Profit and Voluntary Sector,” *Work, Employment and Society* 33, no. 2 (April 2019): 244–61, <https://doi.org/10.1177/0950017017713949>.

76 Werner Krauss, “European Landscapes: Heritage, Participation and Local Communities,” in *The Ashgate Research Companion to Heritage and Identity*, ed. Brian J. Graham and Peter Howard (Burlington, VT: Ashgate Publishing Company, 2008), 425–38; Sarah E. Vaughn, “Reconstructing the Citizen: Disaster, Citizenship, and Expertise in Rural Guyana,” *Critique of Anthropology* 32, no. 4 (December 2012): 359–87, <https://doi.org/10.1177/0308275X12467718>; Saiba Varma, “The Medical Net: Patients, Psychiatrists and Paper Trails in the Kashmir Valley” (PhD, Ithaca, NY, Cornell University, 2013), <https://hdl.handle.net/1813/34122>; Robert Werth, “The Construction and Stewardship of Responsible yet Precarious Subjects: Punitive Ideology, Rehabilitation, and ‘Tough Love’ among Parole Personnel,” *Punishment & Society* 15, no. 3 (July 2013): 219–46, <https://doi.org/10.1177/1462474513481720>.

77 Vaughn, “Reconstructing the Citizen.”

of both Anthropocene narratives and professional archives literature, the archival imagination about climate response may be narrower still.<sup>78</sup>

A further characteristic of double binds is the experience of using what(ever) you have at hand to make and respond to claims, but finding that the tools are always unequal to explaining the situation.<sup>79</sup> For example, standards can be of limited use for explaining, much less advocating within, complicated or politically charged topics.<sup>80</sup> How are people to address major problems (which they can't control) when barely able to control the material conditions of their work?<sup>81</sup> Advocates are left with uncertainty being the only certainty.<sup>82</sup> Because there's no way out of double binds, but people need to live, such situations prompt creative action to survive.<sup>83</sup> Fortun is careful to specify that double binds go beyond difficult choices in that there are no ethical referents available to resolve them. This results in “a persistent mismatch between explanation and everyday life, forcing ethical agents to 'dream up' new ways of understanding and engaging

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78 Almeida and Hoyer, “Living Archive”; Eira Tansey, “The Academic Enclosure of *American Archivist*,” *The American Archivist* 86, no. 1 (Spring/Summer 2023): 117–40, <https://doi.org/10.17723/2327-9702-86.1.117>.

79 Dean Nieuwsma, “Alternative Design Scholarship: Working toward Appropriate Design,” *Design Issues* 20, no. 3: STS and the Social Shaping of Design (Summer 2004): 13–24.

80 Werner Krauss, “Escaping the Double Bind: From the Management of Uncertainty Toward Integrated Climate Research,” in *Anthropology and Climate Change: From Actions to Transformations*, ed. Susan A. Crate and Mark Nuttall (New York: Routledge, 2016), 413–23; Alex M. Nading, “Local Biologies, Leaky Things, and the Chemical Infrastructure of Global Health,” *Medical Anthropology* 36, no. 2 (2017): 141–56, <https://doi.org/10.1080/01459740.2016.1186672>.

81 Michael Lachney et al., “Local Classrooms, Global Technologies: Toward the Integration of Sociotechnical Macroethical Issues Into Teacher Education,” *Bulletin of Science, Technology & Society* 38, no. 1–2 (June 2018): 13–22, <https://doi.org/10.1177/0270467620902972>.

82 David J. Hess, “Ethnography and the Development of Science and Technology Studies,” in *Sage Handbook of Ethnography*, ed. Paul Atkinson et al. (Thousand Oaks, CA: SAGE Publications, 2001), 234–45.

83 Sharon McKenzie Stevens, “Speaking Out: Toward an Institutional Agenda for Refashioning STS Scholars as Public Intellectuals,” *Science, Technology, & Human Values* 33, no. 6 (November 2008): 730–53, <https://doi.org/10.1177/0162243907310162>; Sharon Te Aipiti Stevens, “On Being in Time for Transition,” in *Fleeing Vesuvius: Overcoming the Risks of Economic and Environmental Collapse*, ed. Richard Douthwaite, Gillian Fallon, and Living Economies, New Zealand edition (Carleton, NZ: Living Economies Educational Trust, 2011); Sarah E. Vaughn, “Between a Promise and a Trench: Citizenship, Vulnerability, and Climate Change in Guyana” (PhD, New York, NY, Columbia University, 2013), <https://doi.org/10.7916/D8154GDR>; Trevor J. Durbin, “Big Ocean: Marine Conservation, Bureaucratic Practice, and the Politics of Vagueness in the Pacific Islands” (PhD, Houston, TX, Rice University, 2014), <https://hdl.handle.net/1911/87796>; Sakari Tamminen, *Biogenetic Paradoxes of the Nation: Finncattle, Apples, and Other Genetic-Resource Puzzles* (Durham, NC: Duke University Press, 2019).

the world. They provided a lens for observing experiences produced by established rules and systems, yet not adequately described in standard explanations of how these systems function and change.”<sup>84</sup>

One of the ways Fortun elucidates the concept struck me as especially relevant to the condition of archival workers today: “First, their identity cannot be divorced from context. If citizens are irrational, it is because they are responding to an irrational context.”<sup>85</sup> Enunciatory communities and double binds offer a counter-framework to consensus-manufacturing discourses about professional values. Focusing on values as unifying characteristics of archival work and workers can elide the painful confusions and contradictions of working in the field, as well as the material circumstances (increasingly constrained for most) that shape archivists' actions. These aren't characteristics of workers, but of the environments in which we sell our labor for wages.

It's also useful to step away from understanding archival workers as constituting an epistemic community of technical problem-solving experts, or an interpretive community that shares a culture or way of thinking and knowing. For the former, expertise does little to describe or explain the experiences of those working and living in contingency and precarity. And for the latter, to conceive of archival workers concerned about climate change as belonging to an interpretive community would be to flatten the differences among them, the sometimes irreconcilable disagreements born of experience and respective places within work-site and societal power relations. Although archival workers may have some common ways of enunciating, advocating, and even making sense of experiences, it's not clear that they would even self-consciously consider themselves to be part of a community.<sup>86</sup> Fortun's view of

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84 Fortun, *Advocacy After Bhopal*, 13.

85 Fortun, *Advocacy After Bhopal*, 13.

86 As I discuss further in chapters 2, 5, and 6, I began this project assuming that archival climate advocates would largely see themselves as part of a community of climate advocates in the field, but found that this was not strictly the case.

enunciatory communities as constantly changing and adapting can be a promising one: “They are chameleonlike, morphing in response to the interplays in which they find themselves, learning as they go—developing new strategies at every turn.”<sup>87</sup>

### 1.3.2. Representing enunciatory communities

What distinguishes the enunciatory from the discursive in how Fortun explains advocacy is that “enunciations are made by specific individuals, in specific times and places” (361) which Fortun argues is not the case for statements. Furthermore, synthesizing theories developed by Foucault and Lacan, she writes that “the conscious dimension of speech takes the form of a statement, while the unconscious is signaled in enunciation.”<sup>88</sup> In fact, Fortun does not deal strictly with speech acts made by different participants, although much of her data consist of publications, documents, statements, and testimonies. Organizing practices also constitute enunciations, like how the Bhopal Gas-Affected Women Workers' Union comes together for weekly meetings to hear speeches about their cause, share a meal, and socialize in a public park.

To better understand what I found to be a complicated set of ideas and practices, I looked at how prior studies emphasize different aspects of the theoretical framework as they try to represent enunciatory communities in their domain of research, beyond the work on double binds that I discuss above. Some focus on the fluidity of enunciatory communities, which are neither fixed nor polarized as people position and reposition themselves.<sup>89</sup> Although most prior works agree that enunciatory communities don't pre-exist the circumstances that call them into being,

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87 Fortun, *Advocacy After Bhopal*, 13.

88 Fortun, *Advocacy After Bhopal*, 362.

89 Jenrose Dawn Fitzgerald, “Citizens, Experts and the Economy: The Grassroots Takeover of Kentucky’s Agricultural Future” (PhD, Troy, NY, Rensselaer Polytechnic Institute, 2005); Sonia Grant, “The Kalamazoo River Spill: Pipelines, Politics, and Economies of Knowledge” (Master of Arts, Toronto, ON, University of Toronto, 2014), <https://hdl.handle.net/1807/67911>; Laurie Anne Fedie Moberg, “Fluid Landscapes: Materializing the Future on Thailand’s Flooded Rivers” (PhD, Minneapolis, MN, University of Minnesota, 2018), <https://hdl.handle.net/11299/225889>.

Nzinga illustrates how existing enunciatory communities – advocating against mass incarceration and the war on drugs and to strengthen the social safety net for poor people – provided a foundation for the formation of new communities around arts-based advocacy in post-Katrina New Orleans.<sup>90</sup> Kenner argues that double binds transform extant communities of practice – “how different groups of people produce and share knowledge; mobilize around social, political, environmental, or health problems; and are impacted by advances in science and technology” – into enunciatory communities.<sup>91</sup>

Some writers engage closely with the future-orientedness of advocacy by the enunciatory communities they study. For example, Lord describes how communities in post-hurricane Galveston, Texas, evoke “dreamworlds” of rebuilding a better infrastructure after disaster.<sup>92</sup> Grant describes forms of advocacy that are about preventing future disaster, in response to both acute events – that are widely recognized as disaster – as well as forms of slow violence, which are not widely acknowledged.<sup>93</sup> Multiple studies emphasize the necessity of difference within enunciatory communities to move advocacy forward.<sup>94</sup> In fact, Wolf-Meyer argues that material practices that exclude difference actually foreclose the possibility of articulating a future ethics.<sup>95</sup>

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90 Fari Nzinga, “Exit the Matrix, Enter the System: Capitalizing on Black Culture to Create and Sustain Community Institutions in Post-Katrina New Orleans” (PhD, Durham, NC, Duke University, 2013), <https://hdl.handle.net/10161/8229>.

91 Alison Marie Kenner, “Breathtaking: Contemporary Figures of U.S. Asthma Care” (PhD, Troy, NY, Rensselaer Polytechnic Institute, 2011), 13.

92 Jerry Joseph Lord, Jr., “The Charging of the Flood: A Cultural Analysis of the Impact and Recovery from Hurricane Ike in Galveston, Texas” (PhD, Austin, TX, The University of Texas at Austin, 2011), <http://hdl.handle.net/2152/14780>.

93 Sonia Grant, “Securing Tar Sands Circulation: Risk, Affect, and Anticipating the Line 9 Reversal,” *Environment and Planning D: Society and Space* 32 (2014): 1019–35, <https://doi.org/10.1068/d13144p>.

94 Timothy K. Choy, “Articulated Knowledges: Environmental Forms after Universality’s Demise,” *American Anthropologist* 107, no. 1 (March 2005): 5–18, <https://doi.org/10.1525/aa.2005.107.1.005>; Jeannette Simmonds, “Community Matters: A History of Biological Nitrogen Fixation and Nodulation Research, 1965 to 1995” (PhD, Troy, NY, Rensselaer Polytechnic Institute, 2007), <https://hdl.handle.net/20.500.13015/3930>; Matthew Clay Watson, “Assembling the Ancient: Public Science in the Decipherment of Maya Hieroglyphs” (PhD, Gainesville, FL, University of Florida, 2010), <https://ufdc.ufl.edu/UFE0042044/00001/images>; Callahan, “Complexities of Collaboration.”

95 Matthew Wolf-Meyer, “The Politics of Materiality, or ‘The Left Is Always Late,’” *PoLAR: Political and Legal Anthropology Review* 29, no. 2 (November 2006): 254–75.

### 1.3.3. Enunciatory communities, archives, and records

Several works in and around the field of archives and records have taken up the concepts of enunciatory communities and/or double binds.

Harper studies enunciatory communities that emerge from the question of how tourism, public memorials, and other forms of public remembering should proceed in Oak Ridge, Tennessee, the secretive site of nuclear weapons development. The concept helps to explain how beliefs about “the hybrid objects of science” connect with other “cosmologies, belief systems, institutions and rituals,” and how to represent such big questions in an exhibit.<sup>96</sup>

Bell's study of archival slow violence and its impact on the I'ai in Papua New Guinea (introduced above) also takes up the concept of double bind. As archival records become inaccessible through neglect, community members now try to achieve recognition of their land claims through a “proliferation of documents – clan membership lists, memos, letters – circulating as hand- and machine-made copies” and other “creative archival practices” for piecing evidence together.<sup>97</sup> The double bind in which archival conditions place them also leads to hoarding and competition around knowledge that had traditionally been relational, as community members hope to leverage access to that knowledge as evidence of resource claims. Circumstances offer an impossible choice between retaining land claims and sustaining traditional knowledge practices.

Pattillo et al. demonstrate that ostensibly efficient archival processing approaches can actually accrue significant technical debt, ultimately proving to be more costly to archives and archivists.<sup>98</sup> Using five case studies of digitizing and describing archival material for online

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96 Janice Harper, “Another Roadside Attraction? Preserving the Cultural Heritage of Oak Ridge, Tennessee,” *Anthropology in Action* 12, no. 3 (October 2005): 48.

97 Bell, “Dystopian Realities,” 21, 23.

98 Rebecca Pattillo et al., “Digital Double Bind: Exploring the Impact of More Product, Less Process (MPLP) on Digital Collections” (Digital Library Federation 2019 Forum, Tampa, FL, 2019).

access, they argue that accessibility and efficiency are each desirable outcomes but actually impossible to reconcile with one another – a double bind. The labor-intensive due diligence required to understand user needs and assess archivists' own assumptions often reveals aspects of digital archival work that can't be known or resolved, much less streamlined.

Fortun et al. build on the enunciatory communities framework to develop a rubric for scoping what they call “civic community archives.”<sup>99</sup> These are websites where users can deposit or find ethnographic data, analyze them together, and publish outcomes. The rubric is a set of questions for defining communities and establishing guidelines for what belongs in the archive, how it will be managed, and for how long. The paper seems to reinvent already-existing practices in archives and digital preservation, but it's nonetheless interesting to see how the originator of “enunciatory communities” has come to participate in archival practices. The authors point to different and perhaps unreconcilable definitions of terms like “data” and “archive” as examples of double binds in what they're trying to accomplish.

Writing about archival advocacy and organizing tends to emphasize shared values and interests, or to assume that archival workers as a group share interpretive frameworks and political commitments. Archivists, the argument goes, need to convince powerful others that these values and frameworks are valid, or at least entitle our organizations to funding.<sup>100</sup>

Although few archival workers specifically engage the concept of enunciatory communities, several have addressed instances of irreconcilable complexity within the archives field. One notable example is Winn's account of facilitating a series of workshops called “Deconstructing

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99 Kim Fortun et al., “Civic Community Archiving with the Platform for Experimental Collaborative Ethnography: Double Binds and Design Challenges,” in *HCII 2021: Culture and Computing. Design Thinking and Cultural Computing*, ed. Matthias Rauterberg (9th International Conference, C&C 2021, Held as Part of the 23rd HCI International Conference, HCII 2021, Virtual Conference: Springer, Cham, 2021), 36–55, [https://doi.org/10.1007/978-3-030-77431-8\\_3](https://doi.org/10.1007/978-3-030-77431-8_3).

100For a wealth of examples in this vein, see Kathleen D. Roe, *Advocacy and Awareness for Archivists* (Chicago, IL: Society of American Archivists, 2019).

Whiteness in Archives.”<sup>101</sup> She finds that the ethical injunction to influence archival workers towards cultural competence, and the responsibility to center and attribute the expertise of queer and trans people of color, become contradictory and irreconcilable because white archivists are more likely to accept and attend workshops by another white archivist. In this example of oscillating between equally desirable outcomes, unable to resolve the two because of a third message or constraint, we can see the kind of knotty problem that brings archival workers into enunciatory communities in some times and places.

Building on this prior work, my study of archival workers as climate advocates interrupts “common sense” about double-bind situations and advocacy responses. Naming the double binds and analyzing how they work, rather than accepting them as natural or inevitable, is a necessary step towards refusing their logics. Refusal, in turn, makes possible multiple, kinetic, and generative forms of advocacy on the big questions facing archival workers.

#### **1.4. How to read this dissertation**

The chapters of the dissertation describe the theoretical framework and methodology for this project, followed by three studies that develop from the methodology and inform one another. They can be read in any order. Each attempts to answer the same set of broad questions about past, current, and future relationships between archival workers and climate change:

- How do archival workers engage with climate, ecology, and environment?
  - How do slow violence and double binds shape these engagements?
- What are these archival workers’ norms and expectations for making change?
  - To what extent and in what ways do they act in community?

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101Samantha R. Winn, “Radical Empathy in Peer Education: A Case Study on Deconstructing Whiteness,” *Journal of Critical Library and Information Studies* 3, no. 2: Radical Empathy in Archival Practice (2021), <https://doi.org/10.24242/jclis.v3i2.129>.

In this chapter, I've laid out the theoretical foundations for the research. The second chapter explains its methodological grounding and how I operationalize the research questions.

In the third chapter, I critically review what more than six decades of scholarly and professional productions – articles, presentations, podcasts, and more – indicate have been the impacts of climate, environment, and ecology on archives and records workers' experiences, practices, and perspectives.

In the fourth chapter, I analyze how climate, environment, and ecology shape archives and records practices in seven climate fiction narratives. Climate fiction refers to “literary works that describe the impact of anthropogenic climate change.”<sup>102</sup> Whiteley et al. describe the genre as “a cultural response to mostly scientific and policy discourses that offers a way of exploring dramatic social change through the perspectives of individual and social group experiences by way of fictional narrative.”<sup>103</sup> Studying archival matters in these texts can illuminate many of the concerns that shape present-day record keeping and preoccupy today's archivists.

The fifth chapter reports findings of an interview study eliciting the perspectives and experiences of 13 archives and records workers already engaging in action on climate change. Together, we identify relationships and flows of power that shape contemporary intersections between archiving, record keeping, and climate change, grounded in the experiences of archival workers concerned about climate. In these interviews, I learn from participants' backgrounds and approaches to archives, recognizing that climate-related concerns are inextricably entangled with how they enter and make their way in the field. Slow violence – too much work with too few resources, and experiences of climate disaster – sensitize archival workers as climate advocates,

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102Rebecca Evans, “Fantastic Futures? Cli-Fi, Climate Justice, and Queer Futurity,” *Resilience: A Journal of the Environmental Humanities* 4, no. 2-3: Environmental Futurity (Spring-Fall 2017): 96.

103Andrea Whiteley, Angie Chiang, and Edna Einsiedel, “Climate Change Imaginaries? Examining Expectation Narratives in Cli-Fi Novels,” *Bulletin of Science, Technology & Society* 36, no. 1 (2016): 28.

while also placing them in double binds: trying to pursue principled work in conditions that prevent them from doing so, and advocating from both inside and outside of the field. They come together as an enunciatory community in response to these conditions through flexible advocacy that faces up to the double binds, seeking solidarity wherever they can find it.

I conclude by reading across findings from each empirical and analytical approach to the research questions. The core argument is that forms of slow violence produce double binds that catalyze archival workers into an enunciatory community of climate advocates. My overall approach to this research is that archival workers' adaptations to climate change and intervention in climate futures must involve actually using the knowledge base that exists, and building power to refuse the double bind.

## 2. A methodology for studying [with] archival workers and climate change

### 2.1. Futurity, archival studies, workers' inquiry: The research space

As Aimee Bahng writes, “the future is an always already occupied space.”<sup>104</sup> With this research, I'm trying to describe not only what imaginaries occupy the future and how they do so, but also the mutual influences of imaginaries, material conditions, and actions – a process Bahng names “futurity.”<sup>105</sup> This methodological approach certainly matters for studying the material spaces of climate fiction novels as well as what work the texts themselves might do. Importantly, it also matters when mapping the imaginaries, conditions, and actions operating through archives literature and archival workers' experiences, and how these too construct futurity.

“Archival research culture” saw a period of rapid growth and methods diversification beginning around 1990, with multi-method, interdisciplinary approaches becoming common by the end of the decade.<sup>106</sup> Participating in such an archival research culture entails a commitment to interdisciplinarity. It means recognizing that research happens in multiple communities of practice, including in academia and through different kinds of archival work. Although often taking a pragmatic approach – testing the truth claims of knowledge through practice – the archival research culture that Gilliland and McKemmish describe generally promotes a reflexive research praxis rather than handing down one-way solutions or devaluing theory. The research space for this dissertation includes those decades of multi-method investigation, as well as a

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104Aimee Bahng, *Migrant Futures: Decolonizing Speculation in Financial Times* (Durham, NC: Duke University Press, 2018), 12.

105Bahng writes, “I use the term 'futurity' to highlight the construction of the future and denaturalize its singularity, while maintaining an emphasis on how narrative constructions of the future play a significant role in materializing the present.” Bahng, *Migrant Futures*, 2.

106Anne Gilliland and Sue McKemmish, “Building an Infrastructure for Archival Research,” *Archival Science* 4 (2004): 149–97, <https://doi.org/10.1007/s10502-006-6742-6>; Livia Iacovino, “Multi-Method Interdisciplinary Research In Archival Science: The Case Of Recordkeeping, Ethics And Law,” *Archival Science* 4 (2004): 267–86, <https://doi.org/10.1007/s10502-005-2595-7>.

more recent articulation of critical archival studies as “those approaches that (1) explain what is unjust with the current state of archival research and practice, (2) posit practical goals for how such research and practice can and should change, and/or (3) provide the norms for such critique.”<sup>107</sup> This study proposes norms for making changes, as well as norms for criticism.

Related to matters of goals, norms, and futurity, I consider this project to be a kind of long-running workers' inquiry. In such an approach, investigation develops from the basis of workers' knowledge of their material conditions, and inquiry is an element in organizing workers.<sup>108</sup> Inquiry includes but isn't limited to what readers might recognize as research. Keys to the current inquiry include ongoing study, analysis, activism, dialogue, and information sharing among archival workers concerned about a broad array of matters related to climate and environment (see chapters 3 and 5). Some of these contributions and communications take place in scholarly forums, while others ferment and foment through advocacy networks like Project ARCC (Archivists Responding to Climate Change).<sup>109</sup> As an archival worker myself, I extend the research space for this dissertation to include how I've experienced, understood, and

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107Michelle Caswell, Ricardo Punzalan, and T.-Kay Sangwand, “Critical Archival Studies: An Introduction,” *Journal of Critical Library and Information Studies* 1, no. 2 (June 27, 2017): 2.

108Haider and Mohandesi write in an intellectual and political history of workers' inquiry: “This practice of workers' inquiry, then, implied a certain connection between proletarian knowledge and proletarian politics. Socialists would begin by learning from the working class about its own material conditions. Only then would they be able to articulate strategies, compose theories, and draft programs. Inquiry would therefore be the necessary first step in articulating a historically appropriate socialist project. The practice of disseminating the inquiry also represented a step towards organizing this project, by establishing direct links with workers.” Asad Haider and Salar Mohandesi, “Workers' Inquiry: A Genealogy,” *Viewpoint Magazine*, September 27, 2013, <https://viewpointmag.com/2013/09/27/workers-inquiry-a-genealogy/>. For an example of library workers' inquiry, see: Ben Webster, “Notes of a Library Worker,” *Viewpoint Magazine*, September 25, 2013, <https://viewpointmag.com/2013/09/25/notes-of-a-library-worker/>.

109I signed up to volunteer with Project ARCC the summer after my first year of library school, at the end of my first year working in an archives, although ultimately I was barely involved. My introductory blog post for the group's website is a little wide-eyed and not particularly urgent, but it also contains some of the seeds for the research I present here. Amy Wickner, “Getting Started with ProjectARCC: A Student Perspective,” *Project ARCC: Archivists Responding to Climate Change* (blog), July 16, 2015, <https://projectarcc.org/2015/07/16/getting-started-with-projectarcc-a-student-perspective/>.

misunderstood my own working conditions over the last 14 years.<sup>110</sup> The terms *research*, *study*, *inquiry*, and *advocacy* apply in equal measure.

I use a broad definition of “archival worker” that encompasses people doing archives, records, data, and memory work in and out of (and in response to) different organizational contexts and organizing formations; whether selling their labor for wages, working for free, or holding other relationships to the work. The point is to recognize the real-life multitude of roles and practices.<sup>111</sup> I do draw lines around certain kinds of research, arguments, and practices in the critical literature review (chapter 3) and study of climate fiction (chapter 4), which I describe in more detail below. In an interview study with archival workers (chapter 5), I follow the lead of participants as they self-identify as archival workers and establish the boundaries of their own archival practice(s).

In the following section, I explain the questions, assumptions, prior work, and other considerations that shaped my choice of methods within the research space.

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<sup>110</sup>Some of this political education comes through in research outputs by groups to which I've belonged, including the Digital Library Federation (DLF) Working Group on Labor, Collective Responsibility, and the Archival Workers Emergency Fund / Archival Workers Collective organizing committee. See for instance: DLF Working Group on Labor in Digital Libraries, “Research Agenda: Valuing Labor in Digital Libraries,” DLF Wiki, 2018, <https://wiki.diglib.org/Labor/Valuing-Labor/Research-Agenda>; Sandy Rodriguez et al., “Collective Responsibility: Seeking Equity for Contingent Labor in Libraries, Archives, and Museums,” July 30, 2019, <https://osf.io/m6gn2/>; “Collective Responsibility Labor Advocacy Toolkit,” accessed December 28, 2023, <https://toolkit.dobetterlabor.com/>; Lydia Tang et al., “Summer 2020 Archival Workers Emergency Fund Survey Summary,” *Archival Workers Emergency Fund* (blog), November 10, 2020, <https://awefund.wordpress.com/2020/11/10/summer-2020-archival-workers-emergency-fund-survey-summary/>; Courtney Dean et al., “AWE Fund Winter 2020 Survey Summary,” *Archival Workers Emergency Fund* (blog), July 28, 2021, <https://awefund.wordpress.com/2021/07/28/awe-fund-winter-2020-survey-summary/>; Courtney Dean et al., “Archival Workers Collective 2022 Survey Summary,” *Archival Workers Emergency Fund* (blog), April 17, 2023, <https://awefund.wordpress.com/2023/04/17/archival-workers-collective-2022-survey-summary/>.

<sup>111</sup>For instance, the academic archives where I've been employed since 2014 relies on the efforts of paid staff and faculty in at least six job classifications (none of which is Archivist), volunteers, student workers in multiple categories, short- and long-term interns (both paid and unpaid), library workers of different kinds in non-archives departments, community members and organizations continually involved in building and interpreting collections, and donors and their associates who participate to various degrees in appraising and organizing material before and after it enters archival custody. Unpacking the categories of “archivist” and “archival worker,” which even critical archival studies sometimes black-box, shows the complexity of power relations within even one workplace.

## 2.2. Questions, assumptions, choices: The methods and prior work

This dissertation seeks to answer several questions:

- How do archival workers engage with climate, ecology, and environment?
  - How do slow violence and double binds shape these engagements?
- What are archival workers' norms and expectations for making change?
  - To what extent and in what ways do they act in community?

I embarked with several assumptions and expectations about what I would learn:

- that archival workers' engagement with climate, ecology, and environment has been limited, especially prior to 2015;<sup>112</sup>
- that the most meaningful double bind for archival workers amid climate change is about how and why to preserve records when environmental crisis renders the future uncertain;
- that archival workers' guiding principles and theories of power explain the climate-driven changes in practice, methods of organizing, and models or alliances they seek out;
- and that archival workers understand themselves to be both part of a climate movement within the archives field, as well as participants in a worldwide climate movement.

I used three forms of data collection, creation, and analysis to answer the research questions and test my assumptions: a critical review of scholarly and professional literature; a literary analysis of archival practices in climate fiction texts; and interviews with archivists concerned about climate change. In and across each part of the study, I analyzed data iteratively in a process of thematic analysis, coding with gerunds, and focused coding to develop an understanding of the whole as well as specific arguments within it. Several prior works address intersections of archives, records, climate, and environment through similar methods. However, these works also leave gaps and opportunities through which I confirmed my choice of methods.

Some literature reviews cover sub-topics within the scope of the dissertation (sustainability) or partly overlap with this project (science data curation).<sup>113</sup> Archives and records practices

<sup>112</sup>2015 marks the launch of Project ARCC and the publication of some of the most cited papers about archives and climate change.

<sup>113</sup>Rebecca Meyer, Shannon Struble, and Phyllis Catsikis, "Sustainability: A Review," in *Preserving Our Heritage: Perspectives From Antiquity to the Digital Age*, ed. Michèle Valerie Cloonan (Chicago, IL: Neal-Schuman, 2015), 637–56; Alex H. Poole, "How Has Your Science Data Grown? Digital Curation and the Human Factor: A

appear little, if at all, in three papers aiming to review climate and cultural heritage research comprehensively. Adger et al. synthesize social science on climate threats to “non-material processes and resources that enable people to lead meaningful and dignified lives,” and don't address archives or records.<sup>114</sup> Fatorić and Seekamp also omit archives, records, and archival studies literature from their systematic review on “links between climate change and cultural heritage and resources globally.”<sup>115</sup> Orr et al. update that review but add just one archives-related study.<sup>116</sup> Sesana et al. review climate impacts to cultural heritage but are primarily concerned with built environments.<sup>117</sup> Collections, such as records of archaeological sites, are secondary.

Multiple purposes soon emerged as I assembled and reviewed literature. First, my not-uncommon assumption that intersections of archives and climate first garnered attention in 2015 quickly evaporated. Second, I came to see the corpus as manifesting professional imaginaries that could exist in conversation with the imaginaries of climate fiction. Third, conducting the review was like a second archival education: not only the recurrence of findings and recommendations but also how meta-narratives and structures of the field came into focus. Given the existing breadth of knowledge on this topic, why the relative lack of action? I committed to the method of critical literature review to more deeply engage with these narratives, structures, and emerging questions.

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- Critical Literature Review,” *Archival Science* 15 (2015): 101–39, <https://doi.org/10.1007/s10502-014-9236-y>.
- 114W. Neil Adger et al., “Cultural Dimensions of Climate Change Impacts and Adaptation,” *Nature Climate Change* 3, no. 2 (2013): 112–17, <https://doi.org/10.1038/nclimate1666>.
- 115One likely reason is that the authors began their systematic review by searching Web of Science, a database that indexes no library and information studies (LIS) journals. Sandra Fatorić and Erin Seekamp, “Are Cultural Heritage and Resources Threatened by Climate Change? A Systematic Literature Review,” *Climatic Change* 142, no. 1–2 (March 2017): 227–54, <https://doi.org/10.1007/s10584-017-1929-9>.
- 116Scott Allan Orr, Jenny Richards, and Sandra Fatorić, “Climate Change and Cultural Heritage: A Systematic Literature Review (2016–2020),” *The Historic Environment: Policy & Practice* 12, no. 3–4 (2021): 434–77, <https://doi.org/10.1080/17567505.2021.1957264>.
- 117The study may also miss archives and records literature by searching ScienceDirect (which indexes no archives journals and few LIS titles generally) and Google Scholar, which I found in my research to be more effective at picking up dissertations in institutional repositories than journal content. Elena Sesana et al., “Climate Change Impacts on Cultural Heritage: A Literature Review,” *Wiley Interdisciplinary Reviews: Climate Change* 12, no. 4 (August 2021): e710, <https://doi.org/10.1002/wcc.710>.

Prior analyses of archival themes in climate fiction look at the changing concepts of memory and representations of archivists. Mertens and Craps argue that the scale of climate change challenges human memory; narratives that play with time can make it comprehensible and emotionally accessible.<sup>118</sup> Leaning on “archive” as metaphor, others characterize landscapes, texts, and species as archives of the Anthropocene and contemporary speculation about the future.<sup>119</sup> Parikka imagines “techniques of memory” free of human intervention: data, systems, licenses, artificial intelligence, atmospheric changes, and geological sedimentation as future archives.<sup>120</sup> Craps identifies a common “narrative device” of the “historian, archivist, or geologist who looks back on our present moment from a distant vantage point in a dystopian, (almost) post-human future irrevocably marked by climate change.”<sup>121</sup> Winn studies “memory workers” in climate fiction and identifies “climate-driven risks to contemporary archival practices” such as “the danger of decontextualizing the historic record.”<sup>122</sup> Climate change's implications for Western archival principles like authenticity and provenance are the primary focus.

I began reading climate fiction as a respite from an extended period of overwork, soon noticing archival activity in texts like Kim Stanley Robinson's *New York 2140*. Hearing me clumsily describe Stuchel's argument – how nonhuman materiality in archives changes records and archivists simultaneously – a coworker recommended *Annihilation* by Jeff VanderMeer,

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118Mahlu Mertens and Stef Craps, “Contemporary Fiction vs. the Challenge of Imagining the Timescale of Climate Change,” *Studies in the Novel* 50, no. 1 (2018): 134–53, <https://doi.org/10.1353/sdn.2018.0007>.

119Lucy Bond, Ben De Bruyn, and Jessica Rapson, “Planetary Memory in Contemporary American Fiction,” *Textual Practice* 31, no. 5 (2017): 853–66, <https://doi.org/10.1080/0950236X.2017.1323458>; Richard Crownshaw, “Climate Change Fiction and the Future of Memory: Speculating on Nathaniel Rich’s *Odds against Tomorrow*,” *Resilience* 4, no. 2 (2017): 127–46.

120Jussi Parikka, “Planetary Goodbyes: Post-History and Future Memories of an Ecological Past,” in *Memory in Motion: Archives, Technology and the Social*, ed. Ina Blom, Trond Lundemo, and Eivind Røssaak (Amsterdam: Amsterdam University Press, 2017), 144.

121Stef Craps, “Climate Change and the Art of Anticipatory Memory,” *Parallax* 23, no. 4 (2017): 479.

122Samantha R. Winn, “Dying Well In the Anthropocene: On the End of Archivists,” *Journal of Critical Library and Information Studies* 3, no. 1: Libraries and Archives in the Anthropocene (2020), <https://doi.org/10.24242/jclis.v3i1.107>.

another climate novel with archival themes running through it.<sup>123</sup> The idea of studying archival practices in climate fiction took hold. Just a month later, Winn's article did exactly that – legitimacy! I was quickly coming to understand climate fiction as equally grounded in this world and another place. I've made a few choices in this study that distinguish my analysis of climate fiction from prior work. First, rather than identifying sole archivist figures in the novels, I demonstrate that a diverse array of actors perform archival practices across a variety of contexts, even though the texts don't necessarily designate them as record or memory keepers. Second, I describe these archival practices without necessarily mapping them onto norms of Western archival theory. Here, Streeby's study of writer-as-archivist offers a model for connecting archival imaginaries to material practices.<sup>124</sup> Analyzing Octavia Butler's climate fiction alongside Butler's own archives, Streeby shows how the author linked climate change to the kinds of gradual and unrepresentable damages that characterize slow violence. Global warming garnered little attention, Butler wrote, because it's "an ongoing trend—boring, lasting, deadly—that feeds on itself."<sup>125</sup> Similarly, my study of climate fiction demonstrates how characters use archival practices to make sense of the slow violence they live through.

I found just two interview-based examples of prior work. First, Ferraiolo interviews seven cultural heritage workers, students, and scholars about climate change for the podcast *Material Memory*. Topics include foodways, internal displacement due to climate change, access to technology for preservation and disaster recovery, trauma and survival needs, and data gaps that heighten climate risks to archives.<sup>126</sup> My overall topic is narrower and I specifically recruited

<sup>123</sup>Many thanks to Joseph Koivisto for the recommendation. Dani Stuchel, "Material Provocations in the Archives," *Journal of Critical Library and Information Studies* 3, no. 1: Libraries and Archives in the Anthropocene (2020), <https://doi.org/10.24242/jclis.v3i1.103>.

<sup>124</sup>Shelley Streeby, *Imagining the Future of Climate Change: World-Making Through Science Fiction and Activism* (Oakland, CA: University of California Press, 2018).

<sup>125</sup>Streeby, *Imagining the Future*, 91.

<sup>126</sup>Nicole Kang Ferraiolo, "S2 E1: Does It Matter? Cultural Memory and the Climate Crisis," *Material Memory*, Podcast, 23:27, November 9, 2020, <https://material-memory.clir.org/2020/11/09/does-it-matter/>; Eira Tansey and

archives and records workers. Second, Novak uses interviews to study whether archivists consider social justice activism relevant and feasible in archival practice.<sup>127</sup> The emphasis is on eliciting beliefs by asking participants to agree or disagree with statements about archival activism that summarize concepts from a prior literature review, adhering to the literature to “shield” the researcher's standpoint from participants. I tend to focus on practices as much as perspectives or discourses, asking questions about what people do and have done, and how. The three parts of my research proceeded in parallel and inform one another in multiple directions. Rather than strictly controlling the interview space, I encouraged participants to set the tone for our interactions, and allowed myself to oscillate between outsider and insider positions, along different spaces in the margins of a loosely organized community.

Being honest, I chose to interview archival workers after Dr. Ricky Punzalan read an early dissertation proposal and asked, “Do you not want to talk to people?” But I did! So. Creating a robust consent process was the core of this interview study design.<sup>128</sup> And the more I talked to

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Ben Goldman, “S2 E2: Archivists Against the Climate Crisis,” interview by Nicole Kang Ferraiolo, Podcast, 23:27, November 9, 2020, Material Memory, <https://material-memory.clir.org/2020/11/09/archivists-against-the-climate-crisis/>; Crystal Felima, “S2 E3: How We Tell the Story of Disaster,” interview by Nicole Kang Ferraiolo, Podcast, 20:53, December 18, 2020, Material Memory, <https://material-memory.clir.org/2020/12/18/s2-e3-how-we-tell-the-story-of-disaster/>; Victoria Herrmann, “S2 E4: Climate Displacement and Cultural Resilience,” interview by Nicole Kang Ferraiolo, Podcast, 23:56, January 21, 2021, Material Memory, <https://material-memory.clir.org/2021/01/21/s2-e4-climate-displacement-and-cultural-resilience/>; Saiful Alam Chowdhury, “S2 E5: Living Heritage,” interview by Nicole Kang Ferraiolo, Podcast, 23:02, February 11, 2021, Material Memory, <https://material-memory.clir.org/2021/02/11/s2-e5-living-heritage/>; Itza Carbajal, “S2 E6: The Home of Memory,” interview by Nicole Kang Ferraiolo, Podcast, 25:18, March 9, 2021, Material Memory, <https://material-memory.clir.org/2021/03/09/s2-e6-the-home-of-memory/>; Blessing Nonye Onyima, “S2 E7: Heritage Has a History,” interview by Nicole Kang Ferraiolo, Podcast, 27:51, March 31, 2021, Material Memory, <https://material-memory.clir.org/s2-e7-heritage-has-a-history/>; Nicole Kang Ferraiolo and Lizzi Albert, “S2 E8: What We’ve Learned and What We Can Do,” Material Memory, Podcast, 39:33, April 29, 2021, <https://material-memory.clir.org/s2-e8-what-weve-learned-and-what-we-can-do/>.

127Joy R. Novak, “Examining Activism in Practice,” in *Research in the Archival Multiverse*, ed. Anne J. Gilliland, Sue McKemmish, and Andrew J. Lau (Clayton, Victoria: Monash University Publishing, 2017), 968–97.

128Taking seriously the protocols for conducting research with Indigenous communities in Australia and Canada, I extended certain elements of consent protocols to the entire interview study design. In archival studies, I’m grateful to Gracen Brilmyer for modeling iterative consent this in their dissertation research with “disabled scholars, artists, activists and community members, who have conducted research around disability in archives.” I was lucky to encounter their work early in the process of developing this study. Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council, “Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans,” December

people, the more I came to understand the value of a descriptive study: just as interview participants build theory about archives, climate, and the world from within their lifelong experiences, an analysis that derives from material conditions and experiences would be of use to archival workers in their climate action. So this dissertation isn't self-consciously about building theory. After all, theory-making happens everyday, crossing boundaries of page, discipline, and profession.

Next, I'll describe in detail how I proceeded with each method.

### **2.3. Critical literature review: norms and expectations**

The premise of the critical review of scholarly and professional literature (chapter 3) is that what authors have to say about climate, ecology, and environment also provides insight into the norms and expectations they hold for what to change in the archives field and how. This review is distinct from the study of climate fiction (chapter 4), which I discuss in the next section.

To identify research and other professional publications that engage intersections of archival practice amid climate change, I conducted a literature search of 44 journals, databases, preprint servers, conference programs, and blogs (Table 1).<sup>129</sup> I evaluated more than 10,500 results by removing duplicates and applying inclusion and exclusion criteria (Table 2) to titles and abstracts, thereby identifying 705 articles, presentations, and posts for further review. I read and

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2018, <https://ethics.gc.ca/eng/documents/tcps2-2018-en-interactive-final.pdf>; National Health and Medical Research Council, "Ethical Conduct in Research with Aboriginal and Torres Strait Islander Peoples and Communities: Guidelines for Researchers and Stakeholders," August 2018, <https://www.nhmrc.gov.au/guidelines-publications/ind2>; Gracen Mikus Brilmyer, "Proximity Matters: Disability, Erasure & the Archival Bond of Natural History" (UCLA, 2020), <https://escholarship.org/uc/item/98c6t32x>.

<sup>129</sup>Core journals primarily publish research accounts of archival and records practice, representing a mix of international, national, and U.S. regional scope. Affinity journals are titles in the broader LIS field that regularly publish articles related to archives and records. All journals publish predominantly in English. *Comma* also publishes in French and Spanish, *Partnership* in French, and *Archivaria* French abstracts for all articles. For each conference, I reviewed all programs available online; only a few publish proceedings. Blogs are each affiliated with a professional and/or advocacy group, and collectively authored – rather than being individuals' personal journals.

summarized key points of each work in the resulting list and applied appraisal criteria adapted from Letts et al. (Table 3 and Illustration 1).<sup>130</sup> Through citation chasing, journals' new-issue alerts, and word-of-mouth throughout the dissertation research period, I identified, evaluated, and included additional research and grey literature, adding 72 more publications and five (5) podcast episodes. I organized the resulting corpus of 688 works around six (6) areas of impact, or ways that archival literature and practice seemed to respond to climate, environment, and ecology (Table 4). Some elements of this thematic analysis remain in the final organization of the chapter, but the structure of the narrative and argument changed significantly in the process of further analyzing and reading across chapters, as I describe below.

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<sup>130</sup>Lori Letts et al., "Critical Review Form -- Qualitative Studies (Version 2.0)" (McMaster University Evidence-Based Practice Research Group, 2007).

Source Type (No.)	Sources	Search Terms and Filters	Total Results	Meet Incl. Criteria
Core journals (12)	<i>American Archivist, Archival Issues / The Midwestern Archivist, Archival Science, Archivaria, Archives and Manuscripts, Archives &amp; Records / Journal of the Society of Archivists, Comma, Journal of Archival Organization / Library &amp; Archival Security, Journal of Contemporary Archival Studies, Journal of Western Archives, Records Management Journal</i>	climate, ecolog*, environmental*, "global warming"  <i>Articles, Research articles</i>	2621	280
Affinity journals (9)	<i>In the Library With the Lead Pipe, International Journal of Digital Curation, Journal of Critical Library and Information Studies, Journal of Documentation, Journal of Radical Librarianship, Library Trends, Library Quarterly, Partnership, Progressive Librarian</i>	climate, ecolog*, environmental*, "global warming," archiv*, record*  <i>Research articles</i>	1580	69
Databases (7)	WorldCat UMD, JSTOR, EBSCO Library & Information Science Source, Project Muse, Dissertations & Theses Global, International Federation of Library Associations and Institutions (IFLA) Repository, IFLA Library	climate, ecolog*, environmental*, "global warming," archiv*, record*  <i>English, Library Science, Library and Information Science</i>	6107	210
Preprint servers (2)	LIS Scholarship Archive, SocArxiv	climate, environment, ecology, ecological, "global warming," archives  <i>Library and Information Science, Environmental Studies</i>	60	4
Conferences (10)	Association of Canadian Archivists / Association canadienne des archivistes, Digital Library Federation Forum, Digital Preservation, International Conference on Digital Preservation (iPres), International Council on Archives (ICA) Conference, ICA Congress, Libraries and Archives in the Anthropocene: A Colloquium, National Association of Government Archives and Records Administrators, Society of American Archivists (SAA), Rare Books and Manuscripts Section	n/a	94	94
Blogs (4)	Project ARCC, SAA Issues & Advocacy Section, SAA Electronic Records Section, Digital Preservation Coalition	n/a	81	81
<b>Total before de-duplication</b>			<b>10543</b>	<b>738</b>

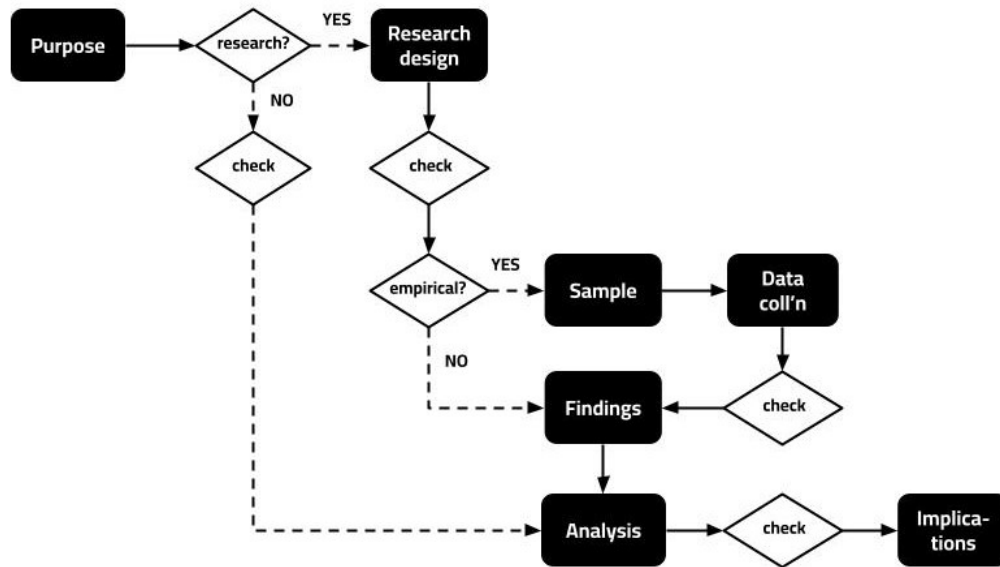
Table 1. Literature search strategy and outcomes

<b>Include only if ...</b>	<b>Justification</b>
Published/recorded in English	Reviewer has academic reading ability in English only.
Pertains to archives and records work, workers, organizations, or collections	Articles that work with the theoretical concept of “the archive” aren't relevant to this study unless they also make arguments about actual archives and records practices and workers. This criterion also excludes writing about the adjacent domains of libraries and museums, unless articles explicitly discuss archives, archival work, records management, or archives and records workers within those domains.
<b>Exclude if ...</b>	<b>Justification</b>
Strictly pertains to the use of archives and records	This study focuses on practices and experiences of archives and records workers (those who build and maintain archives), including those who perform archival work and records management outside of archives and records centers. Articles that discuss scientific and historical research using archival records and data sets, without making arguments related to archival work, aren't relevant to this study.
Strictly pertains to historic preservation of buildings and places	Historical preservation is an adjacent discipline to archives and records preservation.
Strictly pertains to climate control (building interiors) without also discussing the climate, ecology, or environment beyond buildings	“Climate control” – or the management of temperature, humidity, and other conditions of building interiors – is an important topic within archives and records preservation. However, discussions of climate control that don't look beyond the building envelope to discuss a broader climate, ecological, or environmental context aren't relevant to this study.
Refers to ecology in a strictly metaphorical sense	“Ecological behavior” and “information ecology” are popular topics within information studies. Articles aren't relevant to this study if they use ecology as a metaphor in either of the above sense without also discussing archives' and records' relationships to climate, environment, and elements of ecological systems (organisms interacting with one another and their non-living environments)

*Table 2. Inclusion and exclusion criteria for critical literature review.*

Criteria	Questions
Study purpose	Does the work document a research project? Is there a clear statement of the goals of the research? Is there a clear and compelling justification of the need for this study?
Research design (if applicable)	Is the design appropriate to the study purpose? Is the theoretical perspective appropriate to the study purpose? Is the method appropriate to the study purpose?
<b>Relevance check</b>	<b><i>How does the study apply to this project? Is it worth continuing the review?</i></b>
Sampling (if study recruits participants)	Is the sampling method appropriate to the study purpose and design? (redundancy in data) Is the recruitment strategy appropriate to the study purpose and design? (explained & justified selection, explain any discussion around recruitment) Did the researcher(s) obtain informed consent?
Data collection (if study collects data)	Are there clear descriptions of the site and participants? Is there a clear description of the researcher's role, relationship with participants, assumptions, and biases? (critical examination & influence on RQ, data collection; events during the study & implications) Is the method of data collection appropriate to the study purpose? Did data collection use procedural rigor? (access to site, field notes, training data gatherers, any flexibility, confidentiality)
<b>Relevance check (if recruits participants and/or collects data)</b>	<b><i>How does the study apply to this project? Is it worth continuing the review?</i></b>
Data analysis	Is the method of data analysis appropriate to the study purpose? Are data analyses rigorous and inductive? (process & decision trail, clear themes, how data examples were selected, sufficient data shown to support findings, accounting for contradictory data, critical examination of researcher role in data analysis & selection/presentation) Does data analysis develop a conceptual framework appropriate to the study purpose?
Findings	Is there a clear statement of findings? (explicit, adequate discussion of evidence for/against, findings x original RQ) Are findings consistent with and reflective of the data?
<b>Relevance check</b>	<b><i>How does the study apply to this project? Is it worth continuing the review?</i></b>
Implications	Is there evidence of credibility (triangulation, validation, multiple analysts), transferrability, dependability, and confirmability? Does the paper address limitations of the study? Are conclusions appropriate given study findings? Do the findings contribute to theory development and future practice/research?

Table 3. Critical literature appraisal criteria and questions.



*Illustration 1. Critical literature appraisal process.*

Experiences		Practices		Perspectives	
Expanding the scope of who performs archival work	Changing conditions of archival work	Archival inclusion	Expanding the scope of archival practice	Re-thinking collecting	Time and archival work

*Table 4. Thematic analysis of archives literature: areas of impact.*

## 2.4. Climate fiction: responding to slow violence and double binds

A second phase of research addresses the research questions by analyzing archival themes in select works of climate fiction: works of speculative or science fiction that deal specifically with climate change. The assumption of this study is that instances of slow violence and double binds within the texts will explain and contextualize instances of archival practices that characters undertake. In other words, the premise is that archival practices respond to slow violence and double binds. This study is distinct from the review of professional and scholarly publications in the archives field (chapter 3), which I discussed in the previous section.

Chapter 4 considers what constitute archives and records in each fictional world, how archiving and record keeping work – and how they break down – and what power relations archiving and record keeping maintain or disrupt. I look at who archivists and record keepers are, how their labor is valued and rewarded, or not, and what role impermanence and uncertainty play in their work. I'm interested in what these fictional practices have to say about archiving and record keeping now, as well as the futurity these practices produce. Literature imagines in ways that differ from the manuals, standards, policies, research studies, and other technical writings of archivists.<sup>131</sup> Reading climate fiction as an archival worker can make strange and re-imagine preservation, forms and uses for records, and archival methods for constructing futures.

I chose books for this study from a list of 106 climate fiction titles – drawn from personal experience, Dragonfly.eco (an ecofiction fan site and database), and recommendations by acquaintances. I narrowed the list to texts set on Earth that explicitly deal with major environmental change and the social and political conditions surrounding that change. To confirm that the texts address archives and records practices, I sampled and re-read a two-page spread every 20 pages in each book. The final list consists of seven (7) titles published between 2014 and 2018 by authors based in the U.S. and Canada:

- Jeff VanderMeer, *Annihilation* (New York: Farrar, Straus and Giroux, 2014)
- Jeff VanderMeer, *Authority* (New York: Farrar, Straus and Giroux, 2014)
- Jeff VanderMeer, *Acceptance* (New York: Farrar, Straus and Giroux, 2014)
- Cherie Dimaline, *The Marrow Thieves* (Toronto: Dancing Cat Books, 2017)
- Louise Erdrich, *Future Home of the Living God* (New York: HarperCollins, 2017)
- Kim Stanley Robinson, *New York 2140* (New York: Orbit, 2017)
- Larissa Lai, *The Tiger Flu* (Vancouver: Arsenal Pulp Press, 2018)

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<sup>131</sup>This isn't to say that technical writing and research lack imaginaries. Such texts *do* have ideological content, but are often designed to obscure the ideas that organize them. As Hudson argues, this is hegemonic within LIS, maintained in part through incentive and evaluation structures for LIS research. David James Hudson, "The Whiteness of Practicality," in *Topographies of Whiteness: Mapping Whiteness in Library and Information Studies*, ed. Gina Schlesselman-Tarango (Sacramento, CA: Library Juice Press, 2017), 203–34.

To put the list in context, Dragonfly.eco lists 241 novels by North American authors published contemporaneously with the sample. This period of time coincides with my entry into the archives field as a student, worker, and researcher. Reading these texts during those transitions shaped my sense of what archives are for, including the dissertation topic. The works I've chosen vary in the volume of scholarly attention they've received. (I address prior work on each title throughout chapter 4.)

To avoid using climate and other changes strictly as metaphors, I treat each fictional world as a real place with its own material practices and power dynamics, albeit continuous with the world I live in. I re-read each text while recording memos and excerpts that document relationships between archives, records, climate change, and slow violence. I looked at instances of displacement and what it means in each novel to be “in place.” This conceptual mapping helped me understand relationships between slow violence and archival practices, the double binds in which they exist, and how people resist displacement and marginalization. (As an example, Illustration 2 reflects an early reading of *Tiger Flu*.) I developed an initial set of theme groups from this reading (Table 5).

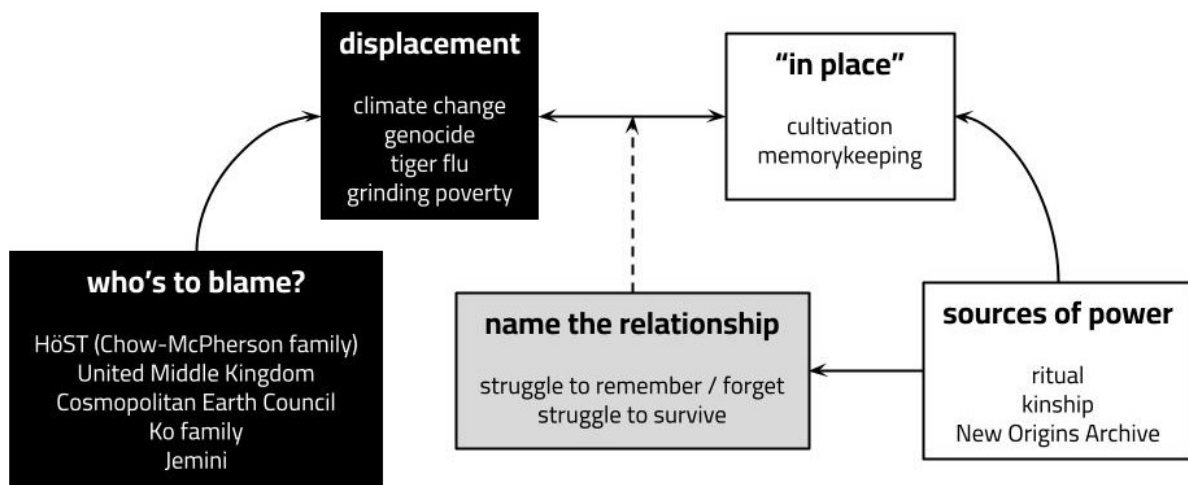


Illustration 2: Mapping slow violence in *The Tiger Flu*.

Displacement	“In place”	Naming the relationship	Sources of power
social collapse environmental change	traditional knowledge kinship & relationships	living through crisis	sources of power keeping records

*Table 5. Thematic analysis of archival practices in climate fiction.*

There are rich archival themes throughout each book, and it would be possible to focus on disciplinary concerns like archives power, the trustworthiness of records, or paranoia in record keeping. Instead, chapter 4 emphasizes practices and experiences, as well as concepts that emerge from the texts *and also* matter to the people, places, ecologies, and infrastructures involved. Although at times it leads away from existing conversations about archives and climate change, I believe this approach surfaces ways of knowing and acting that would be useful to archival workers right now. The five writers whose work I engage with may certainly find tropes of “The Archive” captivating, but their work has more to offer beyond that familiar ground. With their narratives as guides, I describe some roles for archival workers and practices in responding to environmental change.

## **2.5. Interview study: talking with archival climate advocates**

The goal of this part of the study was to elicit experiences and perspectives of archives and records workers who have attended to the causes, threats, and impacts of climate change in relation to their archives and records practice.<sup>132</sup> I anticipated that participants' theories of power and guiding principles as archivists would explain how they organize and advocate for climate action in archives.

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<sup>132</sup>This research was approved by the University of Maryland Institutional Review Board under the project title “Archives, Records, and Climate Change,” passing initial review, continuing review, and amendments (IRBNet IDs: 1549623-1, 1549623-2, 1549623-4, 1549623-5).

### 2.5.1. Recruitment and consent

I recruited participants from among archives and record keeping workers (such as archivists, records managers, researchers, and students) who have participated in any of the following:

- Published articles or made public presentations about relationships between archives, records, and climate change
- Participated in and/or organized activities related to archives, records, and climate change
- Participated in Project ARCC, a community of archivists concerned about climate change
- Participated in the 2014 or 2017 People's Climate March
- Participated in the 2017, 2018, 2019, or 2020 March for Science
- Participated in the Global Climate Strike in 2019, including teach-ins or other activities

Participation in these activities served as indication of interest in the relationships between archives, record keeping, and climate change. However, there are many ways to attend to these relationships that aren't visible through the above forms of participation. I recruited participants via email, including through mailing lists such as the Project ARCC Google Group (all subscribers are eligible to participate), recommendations by mutual contacts, and snowball sampling by encouraging contacts to recommend other potential participants. Recruitment language encouraged participants to forward information about the study, and the penultimate question of the interview protocol asked participants to recommend at least one other person to interview; many recommended more than one.

I used a multi-part process to obtain and confirm participants' consent. First, in reaching out to potential participants, I explained the project in lay language, made it clear that the study is opt-in, and asked them to contact me if interested in participating. Participants each signed a form consenting to participate in recorded interviews. At the start of each conversation, before recording, I reviewed consent procedures and cited the options to leave the study at any time, end an interview at any time, or make comments "off the record" by stopping and starting the

recording. After transcribing each interview, I returned a copy of the transcript and audio recording to each participant, along with a second consent form. This form asked participants to confirm that I may analyze their interview material and/or share it in a public repository, and to indicate whether and how they would like their contributions credited or anonymized. The following anonymization principles apply to how I report interview data:

<p>Names</p> <ul style="list-style-type: none"> <li>• No use of participant names unless they explicitly agree to be credited by name.</li> <li>• No pseudonyms or identifiers for participants (e.g. P01, P02) to minimize the possibility of identifying participants by piecing together pseudonymous quotations and examples.</li> <li>• No use of organization names (especially workplaces) when quoting from or paraphrasing interviews and reflections, unless participants approve naming the organization in a specific quotation.</li> <li>• In lieu of organization names in quotations, use [workplace], [professional association], [advocacy group], [archival institution] or another such descriptor, unless participants approve naming the organization in a specific quotation.</li> </ul> <p>Demographic information</p> <ul style="list-style-type: none"> <li>• If reporting information from the demographic survey, only do so in aggregate.</li> <li>• No demographic information associated with specific participants or data in reports.</li> </ul> <p>Quotations and examples</p> <ul style="list-style-type: none"> <li>• When quoting or giving paraphrased examples from interviews and reflections, prioritize those that can illustrate a point or theme without providing identifying details unless participants agree to be credited by name.</li> <li>• Clear quotations with participants, including use of names, before publishing or submitting to institutional repository.</li> </ul>
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*Table 6. Interview study anonymization principles.*

These principles make it difficult to follow an individual archival worker’s story throughout the chapter if they chose not to be named – that’s the point. However, I indicate when I’m reporting experiences, perspectives, and practices that are widely shared among the group, versus those that may be very particular and also illustrate a larger point. At multiple junctures throughout the course of researching and writing the dissertation, I invited interviewees to edit transcripts, add more commentary, or request that portions of interviews be omitted from the analysis. I also requested approval for each direct quotation included in chapter 5. Given the long course of the project, tumultuous times, and intense subject matter, several participants hesitated

over how to include their contributions in the final draft. In follow-up email exchanges, I emphasized that consent is continuing and iterative, and encouraged them to make choices about their data that fit where they were at present. At each stage, participants had the options to edit material, replace their interview responses with other statements, or withdraw from the study altogether. For those who didn't approve their quotations in the draft or provide alternatives, I paraphrase rather than directly quote their contributions.

Recruitment began in February 2020 and continued through December 2020 on a rolling basis, as the COVID-19 pandemic and other major disruptions made it difficult to carry out or participate in long-term research. Although it's not possible to establish the exact size of the population of this study or the targeted participant groups, I ultimately reached out to 226 archival workers. I conducted preliminary interviews with 16 of these between April 2020 and February 2021, later receiving demographic surveys from 14 and written reflections from eight (8). I held follow-up interviews with seven (7) of 16 between October 2021 and April 2022; five (5) submitted additional written reflections afterward. Of the total cohort of 16, 13 participants returned consent forms agreeing that I could analyze their interviews and reflections. I didn't move forward with any interview materials from the remaining three (3) participants, treating them as having withdrawn from the study.<sup>133</sup> Despite low recruitment rate, the group size allowed interviews to reach saturation of themes while documenting a variety of attitudes and practices.

### **2.5.2. Interview protocols**

Interviews used semi-structured protocols with both predetermined questions and follow-ups for clarity and to pursue interesting threads. I followed Charmaz's guidance on preparing for and

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<sup>133</sup>Although I didn't code or use memos related to their interview materials, speaking with them has doubtless shaped my understanding of the research topic.

conducting “intensive interviews” that see “learning about research participants’ experiences [as] a privilege.”<sup>134</sup> Intensive interviews allow for the exploration of topics as they arise, sensitivity to participants’ points of view, and revision of interview questions in response to in-interview dynamics. They acknowledge that interviews are contextual and negotiated, not neutral, and co-created by interviewer and interviewee. Table 7 lists the protocol for preliminary interviews.

<p>Tell me about yourself and your background</p> <p>How did you come to participate in archival/records practice?</p> <p>Can you describe your practice?</p> <ul style="list-style-type: none"> <li>• Can you describe your day-to-day practice?</li> <li>• Can you describe cycles or phases in your practice?</li> <li>• How has your practice changed since you began working with archives and records?</li> <li>• What principles guide this practice?</li> <li>• What kind of power do you have in archival practice?</li> </ul> <p>How do you define climate change?</p> <p>How did you come to think about climate change?</p> <ul style="list-style-type: none"> <li>• What are impacts of climate change in your life?</li> <li>• How did you come to think about climate change in relation to archives and records?</li> <li>• How has your practice changed since you began thinking about climate change?</li> <li>• How would you characterize your organization’s practices and policies on climate change? <ul style="list-style-type: none"> <li>• What do you think about these practices and policies?</li> </ul> </li> <li>• What organizations or groups do you look to for doing this work?</li> <li>• What forms of organizing do you look to for doing this work?</li> </ul> <p>How would this interview be different under different circumstances?</p> <p>If I speak with one other person, who do you recommend?</p> <p>Is there anything else you would like to share?</p>
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*Table 7. Preliminary interview protocol.*

I adjusted the interview study several times over two years, mostly responding to conversations with participants: sharing questions in advance, building breaks into interviews, and setting down the terms of anonymization in detail. I learned that some questions were particularly confusing for people and that the original question order made for a few jarring transitions. I adjusted the protocol in response, for instance, coming up with a standard way to explain a question that participants often asked me to clarify (“Can you describe cycles or phases

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<sup>134</sup>Kathy Charmaz, *Constructing Grounded Theory*, 2nd ed. (Los Angeles: SAGE, 2014), 70.

in your practice?”). To improve transitions, I reversed the order of several questions, edited the language to make them broader, and added a frequent follow-up as a formal part of the protocol.

Follow-up interviews used a second protocol that invites participants to reflect on the previous conversation and share further perspectives and experiences (Table 8). Additional questions in follow-up interviews reflect emerging themes from preliminary interviews, participant reflections, the archives literature review, and the climate fiction analysis.

Would you like to elaborate on anything we discussed in the first interview? What surprised you upon listening to the recording or reading the transcript? <ul style="list-style-type: none"><li>• Why?</li></ul> How has your practice changed since we last spoke? How has your thinking about climate changed since we last spoke? What does the future of archival practice look like to you?
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*Table 8. Follow-up interview protocol.*

Thanks to the geographical distribution of the recruitment pool and COVID-19-related travel restrictions, interviews took place via the video conferencing software Cisco Webex, which afforded the option to record interviews as MP4 video. Sixteen (16) conversations took place with video on, while nine (9) were voice-only by interviewee preference. Preliminary interviews lasted from 50 to 120 minutes (90 minutes on average) with two (2) conversations split over multiple days due to schedules. Follow-up interviews lasted 30 to 60 minutes (50 minutes on average). After each session, I exported MP3 audio files from the MP4 videos using the free and open-source software (FOSS) VLC Player and transcribed audio while playing it back in Audacity, audio editing FOSS that offers more precise stopping and starting than VLC Player. I then provided copies of audio recordings and transcripts to interviewees, inviting them to listen to and share reflections on the interviews (in any format, at any length) and edit the transcript as they saw fit. All who participated in follow-up interviews reviewed the preliminary transcript and/or recording before our second conversation.

### 2.5.3. Thematic analysis

Data collected and analyzed in this part of the study include a brief demographic survey, video and audio recordings of interviews, interview transcripts, my and participants' post-interview memos, and any additional material participants chose to share as part of either interview or the reflection process. I didn't analyze or share back video. After receiving both consent forms, transcript corrections, and reflections, I continued the analysis by thematically coding transcripts and reflections in Taguette – FOSS for qualitative data analysis. I identified groups of themes (Table 9) that began telling a story about participants' journeys towards critical engagement with archival practices amid climate change. Interviewees actively shaped the analysis through consent processes, within the interview space, and by developing key themes and observations in their reflections. As with other thematic analyses, this one initially structured the argument but underwent significant transformation as I read across multiple forms of data.

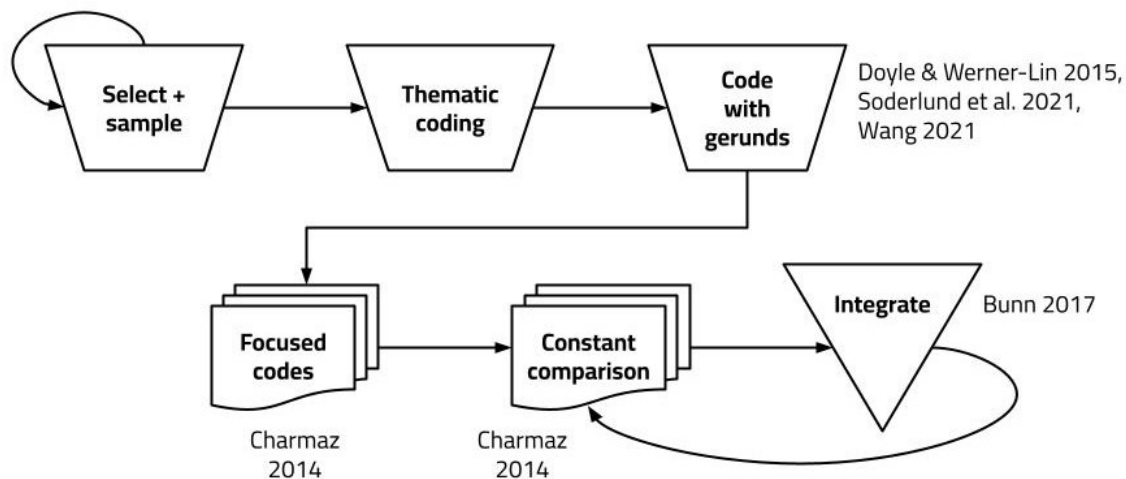
entering the field doing archival work	scope of climate change climate & archives impact climate & archival worker impact trauma	power practices for making change principles for making change
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*Table 9. Thematic analysis of interviews with archival workers*

### 2.6. Where's the action? Data analysis continues

As I describe above, data analysis for each portion of the study began with an iterative process of selection, sampling, and thematic analysis. Next, I'll describe how I used emerging themes from each data collection method, in combination with methods drawn from grounded theory, to analyze data within, across, and between studies and levels (Illustration 3). I returned to the data at this point to code them again with gerunds, and to conduct focused coding. Coding with gerunds is a process of answering questions like, “What's happening here?” and “How do

these data relate to the specific inquiry?”<sup>135</sup> By coding with gerunds, researchers also identify “actions taken by participants to address their main concern(s).”<sup>136</sup> The process encourages coders to “focus on the actions of each participant (including their thinking and self-talk) and their point of view as an individual.”<sup>137</sup> Of focused coding, Charmaz advises, “Focused coding means more than simply selecting and going forward with the codes that most interest you. Rather, it means concentrating on what your initial codes say and the comparisons you make with and between them [...] Focused coding involves attending to how your initial codes account for your data. Look for what these codes imply as well as what they reveal.”<sup>138</sup> In other words, focused coding is about identifying relationships among initial codes (in my case, among gerunds), one step further in building out a theory. My focused coding process identified both affinities and tensions, each of which informs further analysis.



*Illustration 3. Grounded, iterative data analysis.*

135Qi Wang, “Family Relations of Middle-Aged Citizens in Contemporary Urban China: A Grounded Theory Approach,” *International Journal of Sociology and Social Policy* 41, no. 13/14 (2021): 72.

136Maya Doyle and Allison Werner-Lin, “That Eagle Covering Me: Transitioning and Connected Autonomy for Emerging Adults with Cystinosis,” *Pediatric Nephrology* 30, no. 2 (February 2015): 283.

137Patricia D. Soderlund, Adrienne S. Martinez-Hollingsworth, and MarySue V. Heilemann, “Participant Engagement in a Transmedia Storytelling Web-Based App Intervention for Mental Health of Latina Women: Qualitative Analysis,” *JMIR Mental Health* 8, no. 1 (2021): 4.

138Charmaz, *Constructing Grounded Theory*, 140.

Thematic analysis proceeded in the order of literature, climate fiction, then interviews; coding with gerunds and focused coding worked in the reverse order. To code data within each major interview topic with gerunds, I first exported groups of excerpts coded with the main themes from Taguette as comma-separated value files. I imported each file to an OpenOffice spreadsheet, added a column for gerunds, and merged multiple instances of the same excerpt. I coded for gerunds in the new column, breaking up longer excerpts where multiple gerunds seemed appropriate. After coding data within each topic group, I reviewed all codes and frequencies for that topic group with a pivot table. I grouped and regrouped gerund codes that shared an affinity into focused codes; these focused codes and the relationships within and among them formed an outline for chapter 5. Finally, I wrote a description of each focused code and added it to the chapter outline. A narrative emerged from this process as the coding surfaced affinities and tensions that ran throughout the interviews, taking different forms in each conversation or at different stages of each participant's experience. Here I was also able to bring in observations and ideas from the literature review and climate fiction study conducted in parallel. I continued the process for all themes in the chapter outline, noting relationships between themes and reorganizing focused codes if necessary.

Next, I followed similar steps to code the other data sets with gerunds. For the climate fiction study, I coded memos and excerpts within each theme group, adjusting the outline of chapter 4 along the way. To identify relationships within the archives literature, I annotated a list of summaries to describe what each publication is doing and/or what it describes doing. This led me to significantly re-outline the critical literature review (chapter 3). In each instance, coding with gerunds required a new setup for engaging with the data, but also allowed me to break through an analytical impasse. Reading across data in multiple directions helped to clarify a direction.

Writing and revising comprised intensive analytical processes of their own. For instance, I tend to write long rather than short, and spent significant time and effort reminding myself to trust in future opportunities and save this or that paragraph for another time. In the spirit of “constant comparative methods,” I frequently returned to the data while writing – as excerpts, in clusters of codes, or holistically, such as re-reading entire transcripts – to check my interpretations and representations.<sup>139</sup>

Although this isn't a grounded theory study, the methods I describe here maintain grounded theory's methodological commitments to “open-ness, emergence and integration.”<sup>140</sup> Selecting and filtering within the data are normal parts of grounded theory and theoretical emergence.<sup>141</sup> In each chapter, the organization of findings and arguments leads back to the initial research questions: experiences and effects, norms for change, and the conditions that shape what is possible for archival workers to do.

## 2.7. How to evaluate this research

“Archival Workers as Climate Advocates” is a multi-method, qualitative, descriptive study of archival workers' experiences, practices, and perspectives related to climate change. In this chapter, I've outlined a constructivist methodology situated within the research spaces of futurity, critical archival studies, and workers' inquiry.

Qualitative research is more concerned with representative situations – *is it possible to transfer findings?* – than representative samples – *is it possible to generalize from findings?* As I argue in the introduction (chapter 1), the theoretical premise for this dissertation is that concepts

<sup>139</sup>Charmaz, *Constructing Grounded Theory*, 132.

<sup>140</sup>Jenny Bunn, “Grounded Theory,” in *Research in the Archival Multiverse*, ed. Anne J. Gilliland, Sue McKemmish, and Andrew J. Lau (Clayton, Victoria: Monash University Publishing, 2017), 522.

<sup>141</sup>Bunn describes this as “selective coding,” or “the process of distinguishing the so-called core category (that lies at the heart of the matter) and concentrating on exploring that core and its related categories until the point of theoretical saturation.” Bunn, “Grounded Theory,” 524.

like slow violence, double binds, and enunciatory community are transferable from their contexts – respectively, literary studies of environmentalism and anthropological studies of post-disaster advocacy – to support an archival studies investigation of archival advocacy. Readers who pay close attention to footnotes will observe that I draw models for methods (literature evaluation, coding with gerunds) from fields like nursing and mental health, requiring a fair bit of translation. As I'll demonstrate throughout the remaining chapters, the contributions of this study are indeed transferable rather than generalizable. For instance, it would be both possible and necessary to test the theoretical framework, methods, and arguments in contexts such as archival workers' advocacy in areas other than climate, or to study (and organize) climate advocacy among other kinds of knowledge workers. In the conclusion (chapter 6), I return to this topic to discuss possible alternative explanations for my findings. In general, I'm modeling one method for analyzing a big problem with the intent of organizing for change.

One assumption in a constructivist approach is that meaning comes about through actions and interactions; it doesn't exist out there waiting to be discovered, nor is it made of whole cloth.<sup>142</sup> So one appropriate measure of validity is whether the people I interviewed can recognize, through this work, how their perspectives and experiences relate to those of other people. As I note above, processes like intensive interviewing, participant reflections, and constant comparison also helped to check my interpretations. Furthermore, paraphrasing Law, my premise throughout this dissertation is that archival knowledge is constructed in archival practices.<sup>143</sup> Admittedly, interviews and analyses of texts aren't the same as seeing people do things in everyday life, “in the places they usually do them with the people they usually do them

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142David J. Hess, *Science Studies: An Advanced Introduction* (New York: New York University Press, 1997).

143Law writes that, according to ethnographers of science like Bruno Latour, “scientific knowledge is constructed in scientific practices.” John Law, *After Method: Mess in Social Science Research* (London: Routledge, 2004), 19.

with.”<sup>144</sup> That said, as an archival worker of nearly a decade (a kind of insider), I'm familiar with “the language of daily work” through which interview participants talk about their experiences.<sup>145</sup> I continuously re-evaluated the validity of how I interpret what participants are telling me, against this background. In critically evaluating archives literature, everyday experience helps me find the seams and mind the gaps in what's presented for publication, to both spot and speculate on aspects of quotidian archival work that the writing smooths over. And in reading climate fiction as an archival worker, I observe closely the instances of ordinary work that might not stand out to another kind of reader.

The reliability of this study rests on the consistent use and documentation of procedures in collecting and analyzing data. I triangulate findings by studying different aspects of a phenomenon to “tease out complexities,” rather than in a vain effort to eliminate biases.<sup>146</sup> The goal of multiple, iterative, and overlapping forms of data collection and analysis is to produce a rich and substantive study.

At this point I need to elaborate some more of the context in which I'm conducting and presenting this research. Wilson's account of developing a relational methodology influenced me early on to understand the dissertation as undertaken in the midst of many communities and relationships.<sup>147</sup> So for readers to engage with this research, it may be important not only to list my committee members, mentors, and scholarly interlocutors, but also to know that I'm a many-

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144Howard S. Becker, “The Epistemology of Qualitative Research,” in *Ethnography and Human Development: Context and Meaning in Social Inquiry*, ed. Richard Jessor, Anne Colby, and Richard A. Shweder (Chicago, IL: University of Chicago Press, 1996), 62.

145Becker, “Epistemology of Qualitative Research,” 61.

146Gilliland and McKemmish, “Building an Infrastructure,” 172.

147Wilson's project concerns Indigenous research methods, which aren't appropriate for me to practice or claim, fitting neither the relationships I hold nor how I understand the world. So I've learned more from reflecting on our differences and disagreements than I would have by trying to simply borrow from Indigenous methods. Shawn Wilson, *Research Is Ceremony: Indigenous Research Methods* (Winnipeg, MB: Fernwood Publishing, 2008).

generations scholar<sup>148</sup> and second-generation PhD who has nevertheless struggled to figure out rules, norms, and relationships in academia; that I belong to the diverse Korean and Jewish diasporas and have been a settler on Piscataway, Lenape, Mohican, and Canarsie land; that I often know the plants where I live; that I became a library and archives worker after dropping out of landscape architecture school in a recession; or that I talked through many of the ideas in this paper with friends in and out of the archives field, classmates (ditto), and my partner of 16 years. It may matter that I already knew most research participants through Project ARCC, archival labor advocacy, professional communities of digital archivists, and other intersections in the field. Several are friends; most are friends of friends. Acknowledging relationality isn't about correcting bias or taking shortcuts in the quality of work. I've designed, conducted, and reported this inquiry with respect for disciplinary and methodological norms around validation, reliability, and transferability, so that researchers in and out of my field can evaluate it. And, frankly, I'm not sure how readers will engage with this note. Instead, as I describe further in the conclusion (chapter 6), to name relationships is to speak more fully to the responsibilities that shape the research, and the impacts of the research process on those bonds. Thinking relationally has afforded me the structure to explore what I was interested in exploring; question and correct myself; accept criticism; and let what matters to me matter.<sup>149</sup>

Unfortunately, not being closely involved in most existing LAM/LIS climate groups means that I may under-represent certain forms of advocacy that take place through working groups, professional service, grant-seeking, bibliography development, and the like, especially if research participants don't discuss them (chapter 5) or they don't bear mention in the literature I

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148Scholarliness isn't evenly distributed; for instance, most of my maternal women relatives didn't go to college.

149Neither is relationality necessarily about positive affirmation: I've learned so much as people have shared their doubts about me and what I'm trying to do. While conducting this research, I also learned a lot from being a research participant in another archival studies project. Reluctantly losing trust in that scholar as a subject of their study reinforced many questions and doubts I had about my own actions.

review (chapter 3). Throughout this dissertation, I focus on what archival workers (broadly defined, as above) are experiencing and have to say about the intersections of archives, records, and climate change. This leaves little room to give detailed accounts of up-to-the-minute climate news, science, politics – which of course is a choice. And, although the bulk of dissertation research has taken place during the ongoing COVID-19 pandemic, I can't offer a cogent argument about precisely how this has shaped the project. As I describe in the study of climate fiction (chapter 4) and as interview participants relate (chapter 5), it's extremely difficult to make sense of massive change from within. Some readers may consider each of these limitations to be serious gaps in the contextualization of the research.

Finally, studying experiences, practices, and perspectives that are happening in the heart of empire – largely involving academics and other professionals in a North American milieu – is a different project than if I (also a U.S.-based researcher and archivist) were to speak and collaborate with archival workers outside of the U.S.<sup>150</sup> One methodological caution is against positioning normative U.S. models or concepts at the center, to be exported into so-called peripheral contexts.<sup>151</sup> Instead, I demonstrate throughout this dissertation how the materiality of

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<sup>150</sup>Interview participants (chapter 5) are U.S.-based and each held some connection to academia during the interview period as archival workers, students, teachers, consultants, and/or researchers. Almeida and Hoyer argue that such connections entail ideological commitments that limit what climate futures are imaginable. Tansey furthermore observes the growing dominance of academic perspectives in a major U.S. archives journal, which has implications for the corpus of scholarly and professional literature that I analyze in chapter 3. Almeida and Hoyer, “Living Archive”; Tansey, “Academic Enclosure.”

<sup>151</sup>Nixon notes that, in the second half of the 20th century, American environmentalists retreated from “a vision of a global human ecology premised on the notion of a viable environment as a fundamental human right,” refused to link “transnational imperialism to socioenvironmental degradation in the global South,” and increasingly focused “on wilderness preservation, on wielding the Endangered Species Act against developers, and on saving old-growth forests.” Nixon, *Slow Violence*, 250-2. This narrow focus resurfaces each time an archives-related article recounts an environmentalist genealogy that starts with John Muir or ends with Aldo Leopold. See for instance: David A. Clary, “The Archivist and the Human Environment,” *The Midwestern Archivist* 6, no. 1 (1981): 35–45; Erik A. Moore, “Birds of a Feather: Some Fundamentals on the Archives-Ecology Paradigm,” *Archivaria* 63: Special Section on Archives and Culture (Spring 2007): 103–19; Stephen C. Sturgeon, “A Different Shade of Green: Documenting Environmental Racism and Justice,” *Archival Issues* 21, no. 1 (1996): 33–46; Todd Welch, “Green’ Archivism: The Archival Response to Environmental Research,” *The American Archivist* 62, no. 1 (Spring 1999): 74–94, <https://doi.org/10.17723/aarc.62.1.b5083wmj61g73608>.

doing archival work in the wake of colonialism and under austerity conditions (among other forms of slow violence) sharpens archival workers' analysis of what's at stake for archives and records in a changing climate. Nobody knows this better than those living, working, and making change from the margins.

### 3. Negotiating knowledges, galvanizing advocacy: A critical literature review, 1963-2023

#### 3.1. Introduction

Like other climate knowledges, knowledge of archives, records, and climate has been negotiated from the beginning. A corpus of 686 English-language works (1963-2023) shows that there's an extensive knowledge base about climate, environment, ecology, and archives, that is only growing as climate crisis intensifies and archival workers and researchers from several disciplines increasingly turn attention to these topics. Others have summarized themes in select literature from the past two decades, but this diverse body of work across 60 years calls for a re-conceptualization. Rather than zeroing in on gaps in the literature, this extensive critical review describes how archival workers engage with climate, ecology, and environment, and how slow violence and double binds shape these engagements. The review also highlights findings about archival workers' norms and expectations for making change, and identifies ways in which they act through contradictory opinions and interests as an enunciatory community.

In this chapter, I characterize the work happening in and through the literature in terms of eight interrelated activities that appear throughout the corpus. Curating climate records includes activities like creating and collecting records, managing metadata, and identifying and evaluating climate-related sources. Using records has largely to do with political fracas over access to records, sharing climate data, and environmental uses for records. Many contributions to the literature evaluate archival work in terms of effectiveness, climate risks, disaster preparedness, environmental impacts, and the quality of measurements themselves. Designers of technical systems look for ways to reduce energy use and other climate impacts. The literature reflects

dynamics of archival politics, from harmful impacts, to contesting the purpose of archives, to advocacy and activism. Studies of archives and climate recognize multiple ways of knowing, and how colonialism and capitalism turn conflicts between knowledges into relationships of domination. Several contributions propose ways to practice archives another way, such as multiple ways of organizing materials, relationships, and standards. Finally, archival workers offer insights and concrete climate responses based on experiences of disaster and recovery; they insist on archives being part of climate response.

Over the decades, this literature expresses a slow transformation: from a sense of climate and environment as frameworks for controlling the field in which human endeavors take place; through growing attention to social, political, and scientific ferment over human relationships to the non-human “natural” world; and more recently into concern about how the archives field can meet a significant moral and ethical challenge, if not existential threat. I'll conclude with an analysis of how slow violence and double binds become apparent through this iterative history, and how they galvanize an enunciatory community that speaks through the body of literature.

### **3.2. Curating climate records: building archives, managing data**

Literature on curating or managing climate records addresses stages in a lifecycle of records: creating and collecting, cleaning or recovering data, and ongoing management. Much of this work investigates how climate- and environment-related materials slot into existing archival processes, with some accommodation.

### 3.2.1. Making records about climate

Record making is a way to document ongoing changes in the climate and its impact on places.<sup>152</sup> For instance, as Davis describes, writing letters to future generations is a kind of climate activism through record creation.<sup>153</sup> However, creating records about climate and environment is always a matter of political negotiation. Environmental photography, for example, has served multiple political projects and purposes in the U.S.: through settler science projects that supported land use legislation; as empirical data for administering New Deal programs; and with nostalgic images linking environmentalism to social anxieties of the 1970s.<sup>154</sup> At the level of resource use, as Ballestero describes, utilities, legislators, and everyday people use assemblages of records genres and practices (“devices”) as they contest whether water is a human right or commodity.<sup>155</sup> Belton writes that from their 19<sup>th</sup> century beginnings in “Victorian inventory science,” certain kinds of climate recording have always existed somewhere between collections and science, professional and amateur.<sup>156</sup> Since then, according to Edwards, the climate research field has grown and changed through “constantly unpacking, re-examining, and

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152 Lucy Veale, James P. Bowen, and Georgina H. Endfield, “‘Instead of Fetching Flowers, the Youths Brought in Flakes of Snow’: Exploring Extreme Weather History through English Parish Registers,” *Archives and Records* 38, no. 1: Archives and Public History: Places, Pasts and Identities (2017): 119–42, <https://doi.org/10.1080/23257962.2016.1260531>; Elena Sesana et al., “Adapting Cultural Heritage to Climate Change Risks: Perspectives of Cultural Heritage Experts in Europe,” *Geosciences* 8, no. 8 (2018): 305–27, <https://doi.org/10.3390/geosciences8080305>.

153 Casey Davis, “Dear Tomorrow, A Conversation with the Future About Climate Change,” *Project\_arcc* (blog), March 14, 2016, <https://projectarcc.org/2016/03/14/deartomorrow-a-conversation-with-the-future-about-climate-change/>.

154 Gisela Parak, *Photographs of Environmental Phenomena: Scientific Images in the Wake of Environmental Awareness, USA 1860s-1970s* (Bielefeld, Germany: transcript, 2015); C. Jerry Simmons, “DOCUMERICA: Snapshots of Crisis and Cure in the 1970s,” *Prologue*, Spring 2009, HathiTrust; Dustin A. Greenwalt and Brian Creech, “Nostalgic Environmentalities in the EPA’s Documerica and State of the Environment Projects,” *Visual Communication* 19, no. 4 (November 2020): 458–82, <https://doi.org/10.1177/1470357218779119>; Barbara Lynn Shubinski, “From FSA to EPA: Project DOCUMERICA, the Dustbowl Legacy, and the Quest to Photograph 1970s America” (PhD, Iowa City, IA, University of Iowa, 2009), Iowa Research Online, <https://doi.org/10.17077/etd.ernl7umv>.

155 Andrea Ballestero, *A Future History of Water* (Durham, NC: Duke University Press, 2019).

156 Tom Belton, “From Meteorological Registers to Climate Data: Information Gathering in the Early Years of the Meteorological Service of Canada,” *Archivaria* 84 (Fall 2017): 127–49.

revising both historical evidence and predictive models,” as well as “controversy within consensus.”<sup>157</sup> The climate “data” that fuel scientific analyses consists of models and model runs more often than of sensor readings, making data and interpretations of the data inseparable. This means that some aspects of climate knowledge can never be completely certain, but always probabilistic and subject to debate.<sup>158</sup>

### 3.2.2. Building collections about climate and environment

Archives and records workers are collecting records, papers, climate data, publications, and seeds to document climate change. There are urgent calls to collect: Building an environmental change archives will meet societal challenges ranging from “building a green economy” to planetary survival, even if it ends up leaving a record that mostly “illuminates human insecurity and instability.”<sup>159</sup> Clary argues that technical and decision-making processes must be part of these archives, not just transactional evidence or final products.<sup>160</sup> According to Zastrow, green collections and services should offer up-to-date environmental information and gardening supplies to share.<sup>161</sup> Nowviskie states that archives must no longer collect records for human readers alone but also for machine learning bots to use.<sup>162</sup>

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157Paul N. Edwards, *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming* (Cambridge, MA: MIT Press, 2010), 398.

158Edwards, *A Vast Machine*; J. Donald Hughes, “Climate Change: A History of Environmental Knowledge,” *Capitalism Nature Socialism* 21, no. 3 (September 2010): 75.

159Anne J. Gilliland and Sue McKemish, “Recordkeeping Metadata, the Archival Multiverse, and Societal Grand Challenges,” in *DCMI’12: Proceedings of the 2012 International Conference on Dublin Core and Metadata Applications*, ed. Schubert Shou Boon Foo and Hans Overbeek (2012 International Conference on Dublin Core and Metadata Applications, Kuching, Sarawak, Malaysia: Dublin Core Metadata Initiative, 2012), 113; Ben Goldman, “Things the Grandchildren Should Know: Archives and the Origin of an Ecocentric Future” (*Libraries and Archives in the Anthropocene: A Colloquium*, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-s01-i005>.

160Clary, “Archivist and the Human Environment.”

161Jan Zastrow, “Environmental Sustainability and Climate Action in Libraries and Archives,” *Computers in Libraries*, December 2019.

162Bethany Nowviskie, “Reconstitute the World: Machine-Reading Archives of Mass Extinction,” *Bethanie Nowviskie* (blog), June 12, 2018, <http://nowviskie.org/2018/reconstitute-the-world/>.

Archivists documenting climate and environment have sought the records of environmental groups large and small, papers of lawmakers and administrators, materials from community organizations, public submissions of personal objects, and donations from public protest events.<sup>163</sup> They manage cultural materials and records of westward expansion and extractive industries, as well as records of activities in the environmental conservation and biodiversity research communities.<sup>164</sup> One archive collects sounds and soundscapes from the natural world to support environmental research and creative works, as Melton and Melton present.<sup>165</sup> In the 1980s, a regionally popular collection analysis framework associated the topic “Environmental affairs” with ways of controlling land: exploration, surveying, mapping, and conservation.<sup>166</sup> As Rettig's article on documenting flood shows, climate crises explode many assumptions about

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163George T. Mazuzan, “The Challenge of Nuclear Power Development Records,” *The American Archivist* 44, no. 3 (Summer 1981): 229–35, <https://doi.org/10.17723/aarc.44.3.p8v433065512r373>; Connell B. Gallagher, “A Repository Archivist on Capitol Hill,” *The Midwestern Archivist* 16, no. 1 (1991): 49–58; Lisbeth J. Pitblado, “Developing an Acquisition Strategy for the Records of Environmental Non-Government Organizations” (Master of Archival Studies, Vancouver, BC, University of British Columbia, 1993), <http://hdl.handle.net/2429/1656>; Sturgeon, “A Different Shade of Green”; Nancy Richard and Joan D. Krizack, “Preserving the History of Boston’s Diversity,” *Provenance, Journal of the Society of Georgia Archivists* 17, no. 1 (January 1999): 23–52; Sigrid McCausland, “Voices of Opposition: Documenting Australian Protest Movements,” *Archives and Manuscripts* 29, no. 2 (November 2001): 48–63; Brian Keough and Amy C. Schindler, “Thinking Globally, Acting Locally: Documenting Environmental Activism in New York State,” *Archival Issues* 28, no. 2 (2003-2004): 121–35; Aaron Katzeman, “An Archival Art Project about Climate Change and Internet (In)Visibility,” *Mānoa Horizons* 3 (Fall 2018): 7–12; Sandy Staebell and Sue Lynn McDaniel, “On Collaboration: Government Documents and Political Collections in Libraries and Museums,” *Documents to the People* 48, no. 1 (Spring 2020): 13–20, <https://doi.org/10.5860/dtvp.v48i1.7336>; Marion Ville, “2013 - 2023: A Review of Ten Years of Email Archiving in France,” in *19th International Conference on Digital Preservation 2023* (iPRES 2023, Champaign-Urbana, IL, 2023), 16–23.

164Sean Luyk and Colette Leung, “Oil Shows, Rodeos, and UFOs: A Canadian Prairie Sheet Music Collection,” *Fontes Artis Musicae* 63, no. 1 (March 2016): 3–20; Mattias Olshausen, “The Archival Challenges and Choices of a Small Non-Profit Organization Attempting to Preserve Its Unique Past,” *Journal of Western Archives* 10, no. 2 (2019): Article 6, <https://doi.org/10.26077/2c4b-b730>; Edgardo Civalero, “Conservation Science, Local Community, and a Library in Galapagos” (IFLA World Library and Information Congress 2019 – Libraries: dialogue for change, Athens, Greece: International Federation of Library Associations and Institutions, 2019), <https://library.ifla.org/id/eprint/2503>.

165Christopher Melton and Michael Melton, “Recording Change: Building a Collaborative Acoustic Ecology Archive” (ARCHIVES \* RECORDS 2023: Joint Annual Meeting of the Council of State Archivists and the Society of American Archivists, Washington, DC, 2023).

166Gloria A. Thompson, “From Profile to Policy: A Minnesota Historical Society Case Study in Collection Development,” *The Midwestern Archivist* 8, no. 2 (1983): 29–39; David P. Gray, “A Technique for Manuscript Collection Development Analysis,” *The Midwestern Archivist* 7, no. 2 (1987): 91–103.

archivists' ability to scope a topic for documentation.<sup>167</sup> Rivard argues that the choices archivists make in “disaster collecting” – acquiring mass quantities of physical and digital material in the immediate aftermath of a crisis – reflect and reinforce media representations of the people whom disasters affect.<sup>168</sup> Taylor anticipates a shift in collecting, as archivists “will increasingly be concentrating on saving the record of what society needs as opposed to what it would like to preserve,” namely stewarding vital records and evidence of environmental destruction.<sup>169</sup> Marino et al. describe how one archives adopts “just transitions” as a collection development concept, documenting “the transition out of high-carbon activities and into the green economy.”<sup>170</sup> Several archival projects have documented traditional or Indigenous knowledge related to climate and environment, for instance medicinal plants, traditional foods and farming methods, soil and water management, significant animal species, and “localized observations of fine-scale ecological change” such as changes in sea ice.<sup>171</sup> Goals for such projects include preserving

167Rettig extensively reviews archival writings on building collections and documentation about disasters, an effort I won't duplicate here. Patricia J. Rettig, “Documenting Disasters: A Focus on Floods,” *Journal of Western Archives* 10, no. 2 (2019): Article 2.

168Courtney J. Rivard, “Archiving Disaster: A Comparative Study of September 11, 2001 and Hurricane Katrina” (PhD, Santa Cruz, CA, University of California Santa Cruz, 2012), <https://escholarship.org/uc/item/1kt0v0q8>; Courtney J. Rivard, “Archiving Disaster and National Identity in the Digital Realm: The September 11 Digital Archive and the Hurricane Digital Memory Bank,” in *Identity Technologies: Constructing the Self Online*, ed. Anna Poletti and Julie Rak (Madison, WI: The University of Wisconsin Press, 2013), 132–43.

169Hugh A. Taylor, “Some Concluding Thoughts,” *The American Archivist* 57, no. 1: Special Issue: 2020 Vision (Winter 1994): 138–43, <https://doi.org/10.17723/aarc.57.1.q385p56577821157>.

170Carly Marino, Brianne Hagen, and Morgan Baker, “Community, Connections, and Conservation: The Ecological Sustainability Archive at Cal Poly Humboldt” (ARCHIVES \* RECORDS 2023: Joint Annual Meeting of the Council of State Archivists and the Society of American Archivists, Washington, DC, 2023).

171Bridget Burke, “Capturing Conversations about Climate Change in Alaska,” in *Cool Libraries in a Melting World*, ed. Marcel Brannemann and Daria O. Carle (23rd Polar Libraries Colloquy, Bremerhaven, Germany: Helmholtz Gemeinschaft, 2010), 140–48, <https://doi.org/10.7939/R36M33K4V>; Heidi McCann et al., “Archiving Local and Traditional Knowledge of the Arctic: Managing Data and Information in Partnership with Indigenous Communities and Earth Scientists,” in *Cold Regions: Pivot Points, Focal Points*, ed. Shelly Sommer and Ann Windnagel (24th Polar Libraries Colloquy, Boulder, CO, 2012), 79–87, <https://nsidc.org/sites/default/files/documents/other/plc-24-proceedings-gd-34.pdf>; Margaret Sraaku-Lartey et al., “Digitization of Indigenous Knowledge on Forest Foods and Medicines,” *IFLA Journal* 43, no. 2 (June 2017): 187–97, <https://doi.org/10.1177/0340035216681326>; Craig Mishler and Kenneth Frank, “*Shriniinlii* (‘Fix It’): The Grease Mechanics of Translating Gwich’in,” in *Indigenous Languages and the Promise of Archives*, ed. Adriana Link, Abigail Shelton, and Patrick Spero (Lincoln, NE: University of Nebraska Press, 2021), 461–77; Tolulope Balogun, “Digitization of Indigenous Knowledge Systems in Africa: The Case of South Africa’s National Recorded System (NRS),” *Records Management Journal* 33, no. 1 (2023): 88–102, <https://doi.org/10.1108/RMJ-10-2022-0029>; Maureen Kenga, “Digital Accessibility, Inclusion and Diversity:

knowledge within Indigenous communities, combating biopiracy, and complementing scientific data about climate.

Collection development is more than acquiring new material. For example, archives may highlight environment-related collections through processing decisions, or analyze collections to identify gaps.<sup>172</sup> Digital projects and exhibits can connect environmental archives with other collections and reach new audiences.<sup>173</sup> In Svensson's case study of botanist correspondence, the process of digitizing letters and plant samples followed the same global knowledge networks that extracted and accumulated them.<sup>174</sup> Although an imperial collecting impulse connects today's collection builders to naturalist-explorers of the past, Montoya argues, information workers can still contribute to biodiversity by managing the documentation and classification that shape environmentalist discourses.<sup>175</sup> Records of changes in the climate also exist beyond archives, in library collections of publications and government documents about climate politics, sustainable development, and environmentalism.<sup>176</sup> Political ferment and link rot motivate several such

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Digitization of Indigenous Agricultural Knowledge in Shaping Food Security across the Kenyan Coastal Region,” in *19th International Conference on Digital Preservation 2023* (iPRES 2023, Champaign-Urbana, IL, 2023), 336–38.

172 Anne L. Foster, “Minimum Standards Processing and Photograph Collections,” *Archival Issues* 30, no. 2 (2006): 107–18; Patricia J. Rettig, “Collecting Water: An Analysis of a Multidisciplinary Special-Subject Archives,” *The American Archivist* 80, no. 1 (Spring/Summer 2017): 82–102, <https://doi.org/10.17723/0360-9081.80.1.82>.

173 Ruth Duerr and Allaina Howard, “Discovery and Access of Historic Literature of the IPY's (DAHLI): Rescuing Records and Publications of Early IPY Ventures,” in *Building Polar Networks: A Strategy for the Future*, ed. Silvia Sarti and Michela Cecconi (21st Polar Libraries Colloquy, Rome, Italy, 2006), 103–9, <https://doi.org/10.7939/R3Z31P46X>; Ana Margarida Dias da Silva et al., “The Value of the Botany Archive of the University of Coimbra (Portugal) to Biodiversity Research, Crowdsourcing and History of Science Projects,” *Comma* 2018, no. 1–2 (2018): 117–26, <https://doi.org/10.3828/comma.2018.11>.

174 Anna Svensson, “Global Plants and Digital Letters: Epistemological Implications of Digitising the Directors’ Correspondence at the Royal Botanic Gardens, Kew,” *Environmental Humanities* 6, no. 1 (May 2015): 98.

175 Robert Montoya, “Documenting Biodiversity: Information, Libraries, and Professional Ethics” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-i007>.

176 Mary Jane Cedar Face, “Southern Oregon Digital Archives: Preserving a Unique Bioregion and Its Ethnohistory,” *College & Research Libraries News*, April 2004, 193; Mary Jane Cedar Face and Deborah Hollens, “A Digital Library to Serve a Region: The Bioregion and First Nations Collections of the Southern Oregon Digital Archives,” *Reference & User Services Quarterly* 44, no. 2 (December 2004): 116–21; Ingrid Mason, “Virtual Preservation: How Has Digital Culture Influenced Our Ideas about Permanence? Changing Practice in a National Legal Deposit Library,” *Library Trends* 56, no. 1 (Summer 2007): 198–215, <https://doi.org/10.1353/lib.2007.0055>; James G. Neal, “The Integrity of Research Is at Risk: Capturing and

collections, as Magier describes.<sup>177</sup> Seed banks as long-term storage conflict with how people use and renew seeds in their original contexts.<sup>178</sup> By contrast, Kosciejew argues, circulating seed libraries suggest a role for archival workers in improving food security, biodiversity, and restoring human relationships with companion species navigating changes in the environment.<sup>179</sup> Some consider seed archives to demonstrate “human farsightedness and caring for future generations”; but unfortunately most seed banks “don't have systems set up to capture traditional knowledge,” the legacy of earlier collecting initiatives that didn't consider its value.<sup>180</sup>

### 3.2.3. Curating data: roles and responsibilities

Roles, responsibilities, and service models for archivists curating contemporary climate records have changed over decades, often in response to demand for particular services and what resources are available.<sup>181</sup> For instance, according to Kisling, zoo archives emerged from the

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Preserving Web Sites and Web Documents and the Implications for Resource Sharing” (IFLA World Library and Information Congress: Libraries, Citizens, Societies: Confluence for Knowledge, Lyon, 2014), <https://library.ifla.org/id/eprint/907>; Steven W. Witt and Lynne M. Rudasill, “World Sustainable Development Web Archive: Preserving and Disseminating Knowledge for Sustainable Growth” (IFLA World Library and Information Congress 2015: Dynamic Libraries: Access, Development and Transformation, Cape Town, South Africa, 2015), <https://library.ifla.org/id/eprint/1117>.

177 Aruna Magier, “Water, Land, and Forests: Documenting India’s Environmental Activism” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-i002>.

178 Marc Kosciejew, “The Concept of Natureculture Document: A Conceptual Exploration of Seeds, Embodied Information, and Unconventional Records,” *The Journal of Contemporary Archival Studies* 7 (2020): Article 15.

179 Ellie Irons and Anne Percoco, “Next Epoch Seed Library: An Archive of Weedy Species” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-s02-i003>; Holly M. Dean and Jennifer Mezick, “An Examination of Seed Libraries across Two Academic Institutions,” *Urban Library Journal* 26, no. 1 (July 2020): Article 3.

180 Reinhard Hennig, “An Arctic Archive for the Anthropocene: The Svalbard Global Seed Vault,” in *Arctic Archives: Ice, Memory and Entropy*, ed. Susi K. Frank and Kjetil A. Jakobsen (Bielefeld, Germany: transcript, 2019), 197–217; Vance Woods, “Diversity for Resilience Is What It All Comes down to’: Interview with Crop Trust’s Hannes Dempewolf,” *Archivoz* (blog), August 30, 2020, <https://www.archivozmagazine.org/en/diversity-for-resilience-is-what-it-all-comes-down-to-interview-with-crop-trusts-hannes-dempewolf/>.

181 Clyde Collier, “The Archivist and Weather Records,” *The American Archivist* 26, no. 4 (October 1963): 477–85, <https://doi.org/10.17723/aarc.26.4.g63322kv71090325>; William J. Maher, “Ensuring Continuity and Preservation Through Archival Service Agreements,” *Archival Issues* 19, no. 1 (1994): 5–18; Bradley Wade Bishop and Carolyn Hank, “Data Curation Profiling of Biocollections,” *Proceedings of the Association for Information Science and Technology* 53, no. 1 (2016): 1–9, <https://doi.org/10.1002/pr2.2016.14505301046>.

professionalization of zoo libraries – and the resulting rise in record keeping and publications – as well as an interest in marking centennials.<sup>182</sup> Data repository managers find that they need to create formal policies for appraisal, digital preservation, and other archival procedures in response to problems of space, scope, and scale.<sup>183</sup> If successful, Maurer et al. argue, a data archive designed for one set of uses and users can prove useful to a broader range of uses and users.<sup>184</sup> In fact, according to Baker and Yarmey, a variety of repository types play different within data stewardship, operating at different distances from the origin of data.<sup>185</sup>

More recent research emphasizes how data creators perform data sharing and discovery tasks: aggregation, interoperability, indexing, mirroring, and building tools for working with the data.<sup>186</sup> According to Chen, barriers to integrating data and research across disciplines include different units, time scales, knowledge of research regulations and ethics, and attitudes on intellectual property and control over data.<sup>187</sup> Parsons et al. suggest that incentives, education,

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182Vernon N. Kisling, Jr., “Libraries and Archives in the Historical and Professional Development of American Zoological Parks,” *Libraries & Culture* 28, no. 3 (Summer 1993): 247–65.

183Thomas Severiens, “Preservation of Scientific Data (in Natural Sciences),” in *1st International Conference on Preservation of Digital Objects* (iPRES 2004, Beijing, 2004), <https://hdl.handle.net/11353/10.295002>; Gail Steinhart, “Libraries as Distributors of Geospatial Data: Data Management Policies as Tools for Managing Partnerships,” *Library Trends* 55, no. 2: Geographic Information Systems and Libraries (Fall 2006): 264–84; John L. Faundeen, “Appraising U.S. Geological Survey Science Records,” *Archival Issues* 32, no. 1 (2010): 7–22; Jaana Pinnick, “Exploring Digital Preservation Requirements: A Case Study from the National Geoscience Data Centre (NGDC),” *Records Management Journal* 27, no. 2 (2017): 175–91, <https://doi.org/10.1108/RMJ-04-2017-0009>.

184E. P. Maurer et al., “An Enhanced Archive Facilitating Climate Impacts and Adaptation Analysis,” *Bulletin of the American Meteorological Society* 95, no. 7 (2014): 1011–20.

185Karen S. Baker and Lynn Yarmey, “Data Stewardship: Environmental Data Curation and a Web-of-Repositories,” *International Journal of Digital Curation* 2, no. 4 (2009): 12–27, <https://doi.org/10.2218/ijdc.v4i2.90>.

186Glenn K. Rutledge, Jordan Alpert, and Wesley Ebisuzaki, “NOMADS: A Climate and Weather Model Archive at the National Oceanic and Atmospheric Administration,” *Bulletin of the American Meteorological Society* 87, no. 3 (2006): 327–41; William Michener et al., “DataONE: Data Observation Network for Earth — Preserving Data and Enabling Innovation in the Biological and Environmental Sciences,” *D-Lib Magazine* 17, no. 1/2 (February 2011), <https://doi.org/10.1045/january2011-michener>; Mark A. Parsons et al., “A Conceptual Framework for Managing Very Diverse Data for Complex, Interdisciplinary Science,” *Journal of Information Science* 37, no. 6 (December 2011): 555–69, <https://doi.org/10.1177/0165551511412705>; André Vellino, “Harmonizing the Metadata Among Diverse Climate Change Datasets,” *International Journal of Digital Curation* 10, no. 1 (2015), <https://doi.org/10.2218/ijdc.v10i1.367>; Poole, “How Has Your Science Data Grown?”; Ed Summers, “TUI Fun with RepoData,” *Inkdroid* (blog), August 28, 2023, <https://inkdroid.org/2023/08/28/repodata/>.

187Robert Chen, “Enabling Interdisciplinary Use of Scientific Data on Human Interactions in the Environment” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017),.

citation, and professionalization are measures for improving data curation.<sup>188</sup> Several researchers particularly recommend introducing data management during graduate training.<sup>189</sup> Since processes like selection and preservation are always transforming climate data and knowledge, archivists find ways to illustrate “the cumulative effect of decisions” throughout the climate data archiving lifecycle.<sup>190</sup> To Ogburn, appraisal of climate data is an example of how archivists can't know what will be important until it becomes important.<sup>191</sup>

As well as these general curation concerns, there are data activities specific to domains, like a proposal to decentralize fisheries data, or projects that reconcile current and historical records in agricultural research.<sup>192</sup> As Bartolomei and Marrero write, data curation can support disaster

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<https://credo.library.umass.edu/view/full/mums1010-i004>.

188Parsons et al., “A Conceptual Framework.”

189Jake Carlson and Marianne Stowell-Bracke, “Data Management and Sharing from the Perspective of Graduate Students: An Examination of the Culture and Practice at the Water Quality Field Station,” *Portal: Libraries and the Academy* 13, no. 4 (October 2013): 343–61; Marianne Bracke and Michael Fosmire, “Teaching Data Information Literacy Skills in a Library Workshop Setting: A Case Study in Agricultural and Biological Engineering,” in *Data Information Literacy: Librarians, Data, and the Education of a New Generation of Researchers*, ed. Jake Carlson and Lisa R. Johnston (West Lafayette, IN: Purdue University Press, 2015), 129–48; Jaana Pinnick, “Building Resilience at the National Geoscience Data Center: Enhancing Digital Data Continuity Through Research Data Management Training,” in *Proceedings of the 16th International Conference on Digital Preservation*, ed. Marcel Ras, Barbara Sierman, and Angela Puggioni (iPres 2019, Amsterdam, 2019), 360–64, <https://doi.org/10.17605/OSF.IO/CR2AH>.

190Julian C. Wallis et al., “Moving Archival Practices Upstream: An Exploration of the Life Cycle of Ecological Sensing Data in Collaborative Field Research,” *International Journal of Digital Curation* 3, no. 1 (2008): 124; Vladimir Janković, “Montage and Metamorphosis: Climatological Data Archiving and the US National Climate Program,” in *Science in the Archives: Pasts, Presents, Futures*, ed. Lorraine Daston (Chicago, IL: University of Chicago Press, 2017), 223–44.

191Joyce L. Ogburn, “The Imperative for Data Curation,” *Portal: Libraries and the Academy* 10, no. 2 (April 2010): 241–46, <https://doi.org/10.1353/pla.0.0100>.

192Alexis Martin et al., “Data Curation, Fisheries and Ecosystem-Based Management: The Case Study of the Pecheker Database,” *International Journal of Digital Curation* 16, no. 1 (2021), <https://doi.org/10.2218/ijdc.v16i1.674>; Sarah Higgins and Christopher I. Higgins, “Data Curation and Agroecology: Examining Data Requirements for Short Supply Chains,” in *Proceedings of the 18th International Conference on Digital Preservation 2022* (iPres 2022 Glasgow 18th International Conference on Digital Preservation, Glasgow, Scotland: Digital Preservation Coalition, 2022), 260–65, <https://doi.org/10.7207/ipres2022-proceedings>; Bethany Anderson et al., “Cultivating the Scientific Data of the Morrow Plots: Visualization and Data Curation for a Long-Term Agricultural Experiment,” in *Proceedings of the 18th International Conference on Digital Preservation 2022* (iPres 2022 Glasgow 18th International Conference on Digital Preservation, Glasgow, Scotland: Digital Preservation Coalition, 2022), 202–7, <https://doi.org/10.7207/ipres2022-proceedings>; Bethany Anderson et al., “Publishing Agricultural Data from the Morrow Plots: The Value and Logistics of Preserving a Long-Term Research Experiment,” in *19th International Conference on Digital Preservation 2023* (iPRES 2023, Champaign-Urbana, IL, 2023), 127–36.

response, like a volunteer effort to translate narrative data into geocoordinates for hurricane first responders in Puerto Rico.<sup>193</sup> New archives and curation challenges emerge as they become necessary to study climate-related phenomena, whether lichens, ice, marine sediments, soil, or rocks.<sup>194</sup> Resource restrictions are common; according to Erwin et al., widespread budget cuts motivated a group of geospatial data producers to form a data curation network.<sup>195</sup> Information professionals can play “mediator” and outreach roles that sustain data curation collaborations.<sup>196</sup>

### 3.2.4. Recovering climate data from historical records

In curating historical climate records, Delaney argues, archivists undervalue scientific records and have failed to understand the political uses – such as nation-building and control of land – to which they have been put.<sup>197</sup> Many historical records related to climate come from collections associated with imperialism and extractive capitalism, whether missionary accounts, plantation records, the papers of a philanthropist heiress, or collections related to a mining town.<sup>198</sup> Several long-term projects exist to digitize, transcribe, organize, and index historical

193Coral Salomón Bartolomei and Tania Ríos Marrero, “Data, Displacement, and Disaster Response” (Penn in Latin American and the Caribbean (PLAC) 4th Annual Conference: Climate Change, Resilience, and Environmental Justice in Latin America and the Caribbean, Philadelphia, PA, 2018), <https://penntnl.wordpress.com/2018/10/04/data-displacement-and-disaster-response-two-philadelphia-libraries-take-action-in-the-aftermath-of-hurricane-maria/>.

194Anne Pringle, “Establishing New Worlds: The Lichens of Petersham,” in *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, ed. Anna Lowenhaupt Tsing et al. (Minneapolis, MN: University of Minnesota Press, 2017), G157–67; Shannon Mattern, “The Big Data of Ice, Rocks, Soils, and Sediments,” *Places Journal*, November 2017, <https://doi.org/10.22269/171107>.

195This was one of several projects funded under the “national digital platform” grant program of the U.S. Federal government. Tracey Erwin, Julie Sweetkind-Singer, and Mary Lynette Larsgaard, “The National Geospatial Digital Archives—Collection Development: Lessons Learned,” *Library Trends* 57, no. 3 (Winter 2009): 491.

196Kathryn Lage, Barbara Losoff, and Jack Maness, “Receptivity to Library Involvement in Scientific Data Curation: A Case Study at the University of Colorado Boulder,” *Portal: Libraries and the Academy* 11, no. 4 (October 2011): 915–37; Ricardo L. Punzalan and Adam Kriesberg, “Library-Mediated Collaborations: Data Curation at the National Agricultural Library,” *Library Trends* 65, no. 3: Collaboration in Agricultural Librarianship and Information Work (Winter 2017): 429–77, <https://doi.org/10.1353/lib.2017.0010>.

197Jill Delaney, “An Inconvenient Truth? Scientific Photography and Archival Ambivalence,” *Archivaria* 65 (Spring 2008): 75–95.

198Rosemary Seton, “Co-Operative Efforts to Promote and Secure the Archives of Christian Missionary Societies with Special Reference to Those in the Third World,” *Comma* 2005, no. 3 (2005): 1–6, <https://doi.org/10.3828/coma.2005.3.3>; Robert S. Cox, “Maximal Processing, or, Archivist on a Pale Horse,” *Journal of Archival Organization* 8, no. 2 (2010): 134–48, <https://doi.org/10.1080/15332748.2010.526086>;

weather data from ships' logbooks and observatory registers.<sup>199</sup> Changes in paper forms and recording practices alter the shape of data over time, adding up to complicated database problems. Other initiatives recover and standardize climate data from historic photographs of glaciers, charts of Arctic sea ice and sunspots, naturalists' and anthropologists' field notes, legacy data such as film recorded with weather satellites, and other observational records that exist in archival collections – often with a crowdsourcing element.<sup>200</sup> In Indigenous language revitalization projects, members of language communities link information in historical records

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Richard Collier, Jr. and Mary Samouelian, “Playing in the Sandbox: EAC-CPF Projects at Duke University,” *Journal of Archival Organization* 12, no. 1–2 (2015): 4–20, <https://doi.org/10.1080/15332748.2014.997338>; Jillian M. Ewalt, “The Veins That Lighten Dearth: Documenting Hidden Collections in Rural California,” *Journal of Western Archives* 12, no. 2 (2021): Article 1.

- 199Dennis Wheeler, “Archives and Climatic Change: How Old Documents Offer a Key to Understanding the World’s Weather,” *Archives* 31, no. 115 (October 2006): 119–32; Lesley-Ann Dupigny-Giroux et al., “NOAA’s Climate Database Modernization Program: Rescuing, Archiving, and Digitizing History,” *Bulletin of the American Meteorological Society* 88, no. 7 (2007): 1015–17; Eun G. Park et al., “Data Rescue Archive Weather (DRAW): Preserving the Complexity of Historical Climate Data,” *Journal of Documentation* 74, no. 4 (2018): 763–80, <https://doi.org/10.1108/JD-10-2017-0150>; Ricardo García-Herrera et al., “Understanding Weather and Climate of the Last 300 Years from Ships’ Logbooks,” *Wiley Interdisciplinary Reviews: Climate Change* 9, no. 6 (December 2018): e544, <https://doi.org/10.1002/wcc.544>; Gordon Burr, Lori Podolsky, and Yves A. Lapointe, “Redrawing Historical Weather Data and Participatory Archives for the Future,” *Comma* 2021, no. 2 (2023): 297–315, <https://doi.org/10.3828/coma.2021.28>.
- 200Mike Baker, “The Archival Climate History Survey (ARCHISS),” in *Access to Archives—Legal Aspects* (Thirty-Second International Conference of the Round Table on Archives, Edinburgh, Scotland: International Council on Archives, 1997), 119–20; Allaina Howard and Ruth Duerr, “NOAA’s Climate Database Modernization Program at the National Snow and Ice Data Center,” in *Building Polar Networks: A Strategy for the Future*, ed. Silvia Sarti and Michela Ceconi (21st Polar Libraries Colloquy, Rome, Italy, 2006), 284–87, <https://doi.org/10.7939/R3Z31P46X>; G. Garrett Campbell et al., “Nimbus Satellite Data Recovery from Visible Film Archive: 1964, 1966, 1969,” in *Cold Regions: Pivot Points, Focal Points*, ed. Shelly Sommer and Ann Windnagel (24th Polar Libraries Colloquy, Boulder, CO, 2012), 157–61, <https://nsidc.org/sites/default/files/documents/other/plc-24-proceedings-gd-34.pdf>; Liz Schlagel, “Putting DAHLI to Bed: Preservation Tactics for Managing Collections with Limited Means,” in *Cold Regions: Pivot Points, Focal Points*, ed. Shelly Sommer and Ann Windnagel (24th Polar Libraries Colloquy, Boulder, CO, 2012), 135–55, <https://nsidc.org/sites/default/files/documents/other/plc-24-proceedings-gd-34.pdf>; Mohammad Khayat and Steven J. Kempler, “Life Cycle Management Considerations of Remotely Sensed Geospatial Data and Documentation for Long Term Preservation,” *Journal of Map & Geography Libraries* 11, no. 3: Geospatial Data Management, Curation, and Preservation-Part 2 (2015): 271–88, <https://doi.org/10.1080/15420353.2015.1072122>; Michael Jones, “From Personal to Public: Field Books, Museums, and the Opening of the Archives,” *Archives and Records* 38, no. 2 (2017): 212–27, <https://doi.org/10.1080/23257962.2016.1269645>; Sarah Carmen Moritz, “Cú’lḥkan Sqwéqwel (‘I Am Going to Tell a Story’): Revitalizing Stories to Strengthen Fish, Water, and the Upper St’át’imc Salish Language,” in *Indigenous Languages and the Promise of Archives*, ed. Adriana Link, Abigail Shelton, and Patrick Spero (Lincoln, NE: University of Nebraska Press, 2021), 309–48; Michael Gasser, Nicole Graf, and Christian John Huber, “Sunspot Observations and Glacier Images. Archival Research Partnerships Focusing on Modern Climate Research,” *Comma* 2021, no. 2 (2023): 283–96, <https://doi.org/10.3828/coma.2021.27>.

(such as scientific field notes) with clan, group, and family memories and the “origin landscape” of the language.<sup>201</sup> Not all archival scientific records are a good fit for recovering and sharing in open repositories; archivists must consider potential reuse and historical value, extents, and obstacles to recovery, among other criteria.<sup>202</sup> According to Bates et al., issues in data recovery can include lack of funding, archives not valuing or cataloging the source material in helpful ways, and multi-year processes for quality assurance.<sup>203</sup> Manson writes that doing data recovery is a kind of piecemeal work: “Transcribers don’t get to see one page after another from the same book – I might transcribe a page from a vessel at anchor in Portsmouth Harbour in 1862, followed by one from a vessel travelling along the coast of the Congo to Loango Bay in 1864.”<sup>204</sup>

### 3.3 Using climate records: finding sources, contesting access

Mechanisms for using records include identifying sources, sharing data, and political contests over access. The literature also describes archival user behavior and offers examples of using records for environmental purposes.

#### 3.3.1. Identifying sources for climate research

Numerous contributions to the literature argue that some body of environmental data is an archive, or evaluate existing archival collections as potential sources for climate research. For

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201Moritz, “*Cúʻlʻhkan Sqwéqweʻ*”; Clint Bracknell and Kim Scott, “Ever-Widening Circles: Consolidating and Enhancing Wirlomin Noongar Archival Material in the Community,” in *Archival Returns: Central Australia and Beyond*, ed. Linda Barwick, Jennifer Green, and Petronella Vaarzon-Morel (Honolulu & Sydney: University of Hawaiʻi Press & Sydney University Press, 2019), 334.

202Kelly M. Hoffiman et al., “Data Rescue: An Assessment Framework for Legacy Research Collections” (Beltsville, MD: National Agricultural Library, September 30, 2020), <https://doi.org/10.13016/1zmx-ghhq>; Hilary Szu Yin Shiue, Cooper T. Clarke, and Katrina Fenlon, “Data Rescue at the U.S. National Agricultural Library: Case Studies of 3 Hybrid Collections” (Research Data Alliance 2020, Costa Rica, 2020), <https://doi.org/10.13016/af7v-k5dj>.

203Jo Bates et al., “Assembling an Infrastructure for Historic Climate Data Recovery: Data Friction in Practice,” *Journal of Documentation* 75, no. 4 (2018): 791–806, <https://doi.org/10.1108/JD-08-2018-0130>.

204Emily Manson, “Rescuing Historical Data for Climate Science,” *Active History* (blog), March 2, 2022, <https://activehistory.ca/2022/03/rescuing-historical-data-for-climate-science/>.

example, tree rings, coral reef cores, forest transects, and packrat middens can each be proxy archives for past climate.<sup>205</sup> Ilerbaig argues that, removed from their original contexts, now circulating through records-heavy scientific practices, natural history specimens act as records of “the reality from which they were separated.”<sup>206</sup> Proxy records exist within archival collections too; colonial administrators' journals, and park rangers' diaries, for instance, can help fill regional gaps in climate data.<sup>207</sup> Large-scale digital libraries can be “a treasure trove of how-to in the historical record” for use in climate adaptation, according to Christenson.<sup>208</sup> Design archives can help understand how the built environment changes with the climate.<sup>209</sup> Researchers must work across a variety of record types that reflect the changing politics of environmental regulation and use. For example, Bowler and Brimblecombe explain how documentation of air pollution changes according to the increasingly formalized roles of sanitation officials.<sup>210</sup> According to Schotte, the idea of using ships' logbooks as “reference works for future voyages” spread quickly in the 17<sup>th</sup> century, but centralized archives of log books – today's proxy climate records – only came about due to “elite attention” to standardized record keeping and analysis.<sup>211</sup> In Rettig's

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205 Paul R. Sheppard, “Dendroclimatology: Extracting Climate from Trees,” *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 3 (June 2010): 343–52, <https://doi.org/10.1002/wcc.42>; Janice M. Lough, “Climate Records from Corals,” *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 3 (June 2010): 318–31, <https://doi.org/10.1002/wcc.39>; Andrew S. Mathews, “Ghostly Forms and Forest Histories,” in *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, ed. Anna Lowenhaupt Tsing et al. (Minneapolis, MN: University of Minnesota Press, 2017), 614–56; Christine Hallman, “Using Packrat Midden Models to Investigate Climate Variability,” *Science Scope* 41, no. 2 (2017): 54–64.

206 Juan Ilerbaig, “Specimens as Records: Scientific Practice and Recordkeeping in Natural History Research,” *The American Archivist* 73, no. 2 (Fall/Winter 2010): 479.

207 George Adamson, “Private Diaries as Information Sources in Climate Research,” *Wiley Interdisciplinary Reviews: Climate Change* 6, no. 6 (December 2015): 599–611, <https://doi.org/10.1002/wcc.365>; Nkholodzeni Sidney Netshakhuma, “Assessment Appraisal, Disposal and Transfer of Neglected Rangers' Diaries Created from 1926 to 1930: Case of the Kruger National Parks of South Africa,” *Collection and Curation* 40, no. 3: Special Issue: Grey Literature (2021): 83–92, <https://doi.org/10.1108/CC-09-2019-0029>.

208 Heather Christenson, “The Large-Scale Digital Library and Response to the Anthropocene” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-i007>.

209 Wickner, “Getting Started with ProjectARCC.”

210 Catherine Bowler and Peter Brimblecombe, “Archives and Air Pollution History,” *Journal of the Society of Archivists* 13, no. 2 (1992): 136–42, <https://doi.org/10.1080/00379819209511679>.

211 Margaret Schotte, “Expert Records: Nautical Logbooks from Columbus to Cook,” *Information & Culture: A Journal of History* 48, no. 3 (2013): 292, 294.

account, records about a self-designated Colorado “water community” follow the personal and political connections through which this business network defines its boundaries and legacy.<sup>212</sup> Ryall explains how a subject file in a Norwegian polar institute's archives under-represents women participants, reflecting politics in the field of study.<sup>213</sup> According to Dominy, finding and using historical government records is difficult in the absence of “an overarching commercial or political authority that was required to keep records,” which often meant a colonial bureaucracy or trading company.<sup>214</sup>

Contributors to the literature discuss the limitations of specific government archives and collections that explicitly focus on environment.<sup>215</sup> They attribute gaps in these records to political influence on the scope of collections, under-resourced maintenance efforts, and lack of high-level mandates for information transparency and preservation. Current ways of describing climate and environment may be relatively recent terms that wouldn't help in searching for older records, so proxy terms are also necessary.<sup>216</sup> Soares and Sloggett argue that oral histories

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212Patricia J. Rettig, “Collecting Water: An Analysis of a Multidisciplinary Special-Subject Archives,” *The American Archivist* 80, no. 1 (Spring/Summer 2017): 82–102, <https://doi.org/10.17723/0360-9081.80.1.82>.

213Anka Ryall, “Gender in the Twentieth-Century Polar Archive,” in *Arctic Archives: Ice, Memory and Entropy*, ed. Susi K. Frank and Kjetil A. Jakobsen (Bielefeld, Germany: transcript, 2019), 177–95.

214Graham Dominy, “Archives Serving Science: Historic Maritime Records as Sources for Indian Ocean Climate Change Research: Potential and Problems,” *Mousaion: South African Journal of Information Studies* 39, no. 2 (2021): 15.

215Jessica Fero, David H. Duncan, and Stephanie Spry, “Evaluating the Performance of a Centralised Government Geodatabase in Capturing Publicly-Funded Natural Resource Management Activities in Victoria, Australia,” *Australasian Journal of Environmental Management* 20, no. 2 (2013): 101–15, <https://doi.org/10.1080/14486563.2013.764590>; Bruce Bustard and Lee Ann Potter, “Searching for the Seventies: Photographs from the Environmental Protection Agency’s DOCUMERICA Project,” *Social Education* 77, no. 2 (April 2013): 52–56; Caleb Wellum, “The Ambivalent Aesthetics of Oil: Project Documerica and the Energy Crisis in 1970s America,” *Environmental History* 22 (October 2017): 723–32, <https://doi.org/10.1093/envhis/emx085>; Bruce Berman and Mary M. Cronin, “Project DOCUMERICA: A Cautionary Tale,” *Journalism History* 43, no. 4 (Winter 2018): 186–97, <https://doi.org/10.1080/00947679.2018.12059180>; Moisés Rockembach and Anabela Serrano, “Climate Change and Web Archives: An Ibero-American Study Based on the Portuguese and Brazilian Contexts,” *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 222–39, <https://doi.org/10.1108/RMJ-11-2020-0039>.

216Bowler and Brimblecombe, “Archives and Air Pollution.”

provide better data for evaluating climate risks than archival records.<sup>217</sup> According to Myers and Moe, it's worth asking of any collection, "What does this say about the environment?"<sup>218</sup>

### 3.3.2. Towards better climate data sharing

Several papers describe needs, obstacles, and potential improvements to climate data sharing. Environmental research, modeling, and weather forecasting each require international government data, Shaffer writes, but sharing involves political negotiation and even contestation.<sup>219</sup> For instance, Kriesberg and Kowall study how joint U.S.-Soviet fisheries research in early days of digital and electronic data required negotiating data exchange formats and standards.<sup>220</sup> Yost describes how a weather-data-collecting partnership between U.S. and E.U. agencies encountered friction over sharing: NOAA (U.S.) follows an open data policy, while EUMETSAT (E.U.) charges for commercial data reuse.<sup>221</sup> Lobbying to commercialize U.S. government weather data through public-private partnerships dovetails with efforts to reduce government capacity; one paper proposes dividing data and systems maintenance between agencies and companies.<sup>222</sup> Across scientific disciplines, not enough researchers share data publicly even if funding agencies require it.<sup>223</sup> One theory of change for better sharing is to

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217 Sara Soares and Robyn Sloggett, "Oral Histories of Natural Disasters in Timor-Leste," in *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott (London: Routledge, 2023), 79–98, <https://doi.org/10.4324/9781003163312-6>.

218 Bernadette Myers and Melinda Moe, "Greening the Archive: The Social Climate of Cotton Manufacturing in the 'Samuel Oldknow Papers, 1782-1924,'" *Journal of Contemporary Archival Studies* 8 (2021): 16.

219 Dory Shaffer, "Documents Without Borders: Show Me the (International) Data!," *DttP: Documents to the People* 51, no. 1 (Spring 2023): 5–6, <https://doi.org/10.5860/dttP.v51i1.8017>.

220 Adam Kriesberg and Jacob Kowall, "US–Soviet Fisheries Research during the Cold War: Data Legacies," *Archival Science* 23 (2023): 7–28, <https://doi.org/10.1007/s10502-022-09398-z>.

221 Freya R. Yost, "Sharing the Data: The Information Policies of NOAA and EUMETSAT," *IFLA Journal* 42, no. 1 (2016): 5–15, <https://doi.org/10.1177/0340035215611135>.

222 Gemma Cirac-Claveras, "The Weather Privateers: Meteorology and Commercial Satellite Data," *Information & Culture: A Journal of History* 53, no. 3/4 (2018): 271–302, <https://doi.org/10.7560/IC53302>; Wayne A. Morrissey, "Data Management and Global Change Research: Technology and Infrastructure," *Government Information Quarterly* 10, no. 2 (1993): 159–201, [https://doi.org/10.1016/0740-624X\(93\)90050-A](https://doi.org/10.1016/0740-624X(93)90050-A).

223 Merinda McLure et al., "Data Curation: A Study of Researcher Practices and Needs," *Portal: Libraries and the Academy* 14, no. 2 (2014): 139–64; Dominique G. Roche et al., "Troubleshooting Public Data Archiving: Suggestions to Increase Participation," *PLoS Biology* 12, no. 1 (January 2014): e1001779,

establish community norms and encourage individual conformance to them.<sup>224</sup> For example, Roche et al. suggest that journals introduce “flexible embargoes,” data reuse etiquette, and incentives for authors to cite the publicly available data sets they use.<sup>225</sup> Linked data can model climate data provenance by describing the relationships between observations, processes enacted on the data, and processing agents, according to Shaon et al.<sup>226</sup> Developing metadata standards for environmental and geographic information can also support data sharing.<sup>227</sup> Berger and Carey observe that climate research's focus on open science, data sharing, and interdisciplinary collaborative networks can be a model for scholarly communication in general.<sup>228</sup>

### 3.3.3. Contesting access to environmental information

Access to environmental information is a significant topic of discussion in the literature, beginning with the regulation of access. There have been four major international agreements about access to environmental information: the Rio Declaration of 1992, Bali Guidelines of 2010, Aarhus Convention of 1998, and Kyiv Protocol 2003.<sup>229</sup> Implementation of the agreements among signee nations vary from “aspirational proclamations” to more tangible action, writes

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<https://doi.org/10.1371/journal.pbio.1001779>.

224 Sarah Callaghan, Steve Donegan, and Sam Pepler, “Making Data a First Class Scientific Output: Data Citation and Publication by NERC’s Environmental Data Centres,” *International Journal of Digital Curation* 7, no. 1 (2012): 107–13, <https://doi.org/10.2218/ijdc.v7i1.218>; Emilie Dassié et al., “Saving Our Marine Archives,” *Eos* 98 (February 24, 2017), <https://doi.org/10.1029/2017EO068159>.

225 Roche et al., “Troubleshooting Public Data,” 2.

226 Arif Shaon et al., “Opening Up Climate Research: A Linked Data Approach to Publishing Data Provenance,” *International Journal of Digital Curation* 7, no. 1 (2012), <https://doi.org/10.2218/ijdc.v7i1.223>.

227 Arif Shaon and Andrew Woolf, “Long-Term Preservation for Spatial Data Infrastructures: A Metadata Framework and Geo-Portal Implementation,” *D-Lib Magazine* 17, no. 9/10 (September 2011), <https://doi.org/10.1045/september2011-shaon>; Arif Shaon et al., “Long-Term Sustainability of Spatial Data Infrastructures: A Metadata Framework and Principles of Geo-Archiving” (iPres 2011, Singapore, 2011), 120–29; Graham A. Parton et al., “MOLES3: Implementing an ISO Standards Driven Data Catalogue,” *International Journal of Digital Curation* 10, no. 1 (2015): 249–59, <https://doi.org/10.2218/ijdc.v10i1.365>.

228 Monica Berger and John Carey, “Open Scholarship and Climate Change: The Imperative for a New Information Ecosystem for the Anthropocene” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-i004>.

229 Sarah Lamdan, “Beyond FOIA: Improving Access to Environmental Information in the United States,” *Georgetown Environmental Law Review* 29, no. 3 (2017): 481–512.

Lamdan.<sup>230</sup> Among the more active responses, United Kingdom regulations require proactive and centralized disclosure, limit exemptions, and make requests easy to submit with short fulfillment deadlines. These Environment Information Regulations (EIR) are distinct from the freedom-of-information (FOI) regulations, as Pelton and Thorley explain.<sup>231</sup> Jubb observes that a 2009 university server hack and email/document leak (colloquially known as ClimateGate) showed a need for FOI guidance to domains like higher education and research.<sup>232</sup> According to Asogwa and Ezema, lack of FOI laws presents a major obstacle to environmental information access in the roughly 75% of African nations without such regulations – despite public interest in FOI, government accountability, and environmental issues.<sup>233</sup> Even in the quarter of nations that do, implementation meets obstacles related to funding, government capacity, restrictive secrecy laws, and lack of public awareness about records issues. Public distrust of government record keeping also characterizes environmental information access in Canada and Iceland, where researchers find that the impacts of information access legislation are unclear.<sup>234</sup> Strong local regulations can make a difference: Henttonen and Packalén observe that in Helsinki, environmental government records are one of the types that tend “to have extended retention periods and may even be preserved permanently.”<sup>235</sup>

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230Lamdan, “Beyond FOIA,” 505.

231Colin Pelton and Mark Thorley, “The Fit Between the UK Environmental Information Regulations and the Freedom of Information Act,” *International Journal of Digital Curation* 1, no. 3 (August 2008): 158–66, <https://doi.org/10.2218/ijdc.v3i1.51>.

232Michael Jubb, “Freedom of Information in the UK and Its Implications for Research in the Higher Education Sector,” *International Journal of Digital Curation* 7, no. 1 (March 2012): 57–71, <https://doi.org/10.2218/ijdc.v7i1.214>.

233Brendan Eze Asogwa and Ifeanyi Jonas Ezema, “Freedom of Access to Government Information in Africa: Trends, Status and Challenges,” *Records Management Journal* 27, no. 3 (2017): 318–38, <https://doi.org/10.1108/RMJ-08-2015-0029>.

234Kerry Badgley, Margaret J. Dixon, and Paulette Dozois, “In Search of the Chill: Access to Information and Record-Keeping in the Government of Canada,” *Archivaria* 55 (Spring 2003): 1–19; Johanna Gunnlaugsdottir, “Reasons for the Poor Provision of Information by the Government: Public Opinion,” *Records Management Journal* 26, no. 2 (2016): 185–205, <https://doi.org/10.1108/RMJ-03-2015-0013>.

235Pekka Henttonen and Saara Packalén, “Results of Archival Appraisal: A Study of a Finnish City,” *Archival Science*, 2023, 15.

U.S. laws that mandate and regulate public access to environmental regulations include the Freedom of Information Act (FOIA), environmental laws, and Securities and Exchange Commission (SEC) -mandated disclosures.<sup>236</sup> Mazuzan describes how expanding environmental regulations to include nuclear reactors led to the creation of more and different kinds of records at the Atomic Energy Commission (AEC), Environmental Protection Agency (EPA), and other government bodies.<sup>237</sup> There are many loopholes in these regulations. Governments at all levels cite FOIA exemptions to restrict information that should be released to first responders and communities under the Emergency Planning and Community Right-to-Know Act (EPCRA) and Clean Air Act (CAA), according to Lamdan and Bratspies.<sup>238</sup> Lamdan explains that government contractors aren't subject to the same rules of information disclosure, despite closely resembling “the basic work of government.”<sup>239</sup> Under federal securities laws, Wasim writes, companies might highlight “uncertainty” and the “speculative” nature of climate impacts, to avoid disclosing records related to climate risks.<sup>240</sup> Across legal contexts, effective record keeping is necessary for sustainability reporting, whether mandated by law (as in the European Union) or responding to investor demand.<sup>241</sup> Bookspan recommends that corporations develop internal

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236As Brown notes, political fights around FOIA have concerned environmental impacts from early on. A 1971 lawsuit on access to nuclear testing records prompted the U.S. Congress to address problems with FOIA, introducing measures that remain in place today. Tommy C. Brown, “The Right to Know . . . Or Not: The Freedom of Information Act, 1955-1974,” *Provenance, Journal of the Society of Georgia Archivists* 33, no. 2 (2016): 93–127; Sarah Lamdan, *Environmental Information: Research, Access, and Environmental Decisionmaking* (Washington, DC: Environmental Law Institution, 2017).

237Mazuzan, “Challenge of Nuclear Power.”

238Sarah Lamdan and Rebecca Bratspies, “Taking a Page from the FDA’s Prescription Medicine Information Rules: Reimagining Environmental Information for Climate Change,” *University of Arkansas at Little Rock Law Review* 40, no. 4 (2018): Article 4.

239Sarah Lamdan, “Sunshine for Sale: Environmental Contractors and the Freedom of Information Act,” *Vermont Journal of Environmental Law* 15 (2013-2014): 241.

240Roshan Wasim, “Corporate (Non)Disclosure of Climate Change Information,” *Columbia Law Review* 119, no. 5 (2019): 1311–54.

241Bukaza Chachage, Patrick Ngulube, and Christine Stillwell, “Developing a Model Corporate Records Management System for Sustainability Reporting: A Case of the Iringa Region in Tanzania,” *South African Journal of Information Management* 8, no. 1 (March 2006), <https://doi.org/10.1108/01435120510631747>; Tove Engvall, “Records Roles in Corporate Sustainability Reporting: An Explorative Study of Corporate Sustainability Reporting from an Archives and Information Science Perspective” (Master by Research,

environmental archives, the better to defend themselves with records in Superfund cases.<sup>242</sup> However, according to Tansey, extractive industries have little incentive to follow records or safety rules since fines are cheaper than safety updates.<sup>243</sup> One corporate records manager reports that because “legislation rarely makes specific reference to retention periods for particular records,” determining the retention of health, safety, quality assurance, and environmental records is up to internal negotiation.<sup>244</sup>

There is a perpetual need to improve access to climate-related records. In the U.S., environmental information is of immense scope, decentralized across many sources using outdated technology, hard to understand without expert knowledge, and only accessible (if at all) after long delays.<sup>245</sup> There are also acute barriers to access, Tansey notes, such as political threats to climate data.<sup>246</sup> Lamdan argues that “proactive” legal tools (changing regulations) would be more effective than “post hoc work” (volunteer data rescue) for improving the situation.<sup>247</sup> When governments change records practices but don't report the changes, as McLoughlin describes, members of the public can't understand why records that once existed are no longer available in repositories.<sup>248</sup> As Jackson recounts, when resource decisions weaken local environmental protection enforcement, the state of records about environmental matters also suffers, and county

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Sundsvall, Sweden, Mid Sweden University, 2019), <https://urn.kb.se/resolve?urn=urn%3Anbn%3Ase%3Aminu%3Adiva-36765>.

242Shelley Bookspan, “Corporate Records and Environmental Liability in the Era of Superfund,” in *Corporate Archives and History: Making the Past Work*, ed. Arnita A. Jones and Philip L. Cantelon (Malabar, FL: Krieger Publishing Company, 1993), 109–13.

243Tansey, “Regulatory Recordkeeping,” 209.

244Pat Taylor, “The Continuing Preservation of Traceable Evidence,” *Records Management Journal* 4, no. 2 (February 1994): 80.

245Sarah Lamdan, “Improving Access to Environmental Information and Records” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-i007>.

246Eira Tansey, “A Multitude of Problems Needs a Multitude of Voices,” *Project\_arcc* (blog), September 22, 2015, <https://projectarcc.org/2015/09/22/a-multitude-of-problems-needs-a-multitude-of-voices/>.

247Lamdan, “Improving Access.”

248Lynette C. McLoughlin, “Environmental History, Environmental Management and the Public Record: Will the Records Be There When You Need Them?,” *Australasian Journal of Environmental Management* 6, no. 4 (1999): 207–18, <https://doi.org/10.1080/14486563.1999.10648472>.

archives (for instance) take on the risks and responsibilities for maintaining necessary evidence.<sup>249</sup> Tansey's study of fracking records shows how, when it comes to corporate environmental disclosures, inconsistent records scheduling leaves few legible indicators of what records exist but aren't being disclosed.<sup>250</sup> Companies are thus able to proactively disclose records that support a case for economic expansion, while holding back records that might subject them to public accountability for the impacts of their activities.

### 3.3.4. Improving access systems for environmental records

For environment-related records that *are* available in repositories, access systems need improvement. Archival workers have undertaken to build or customize workflows, repositories, and access tools based on the particular needs of environmental records, from geospatial data to biological specimens to Antarctic observation records.<sup>251</sup> The frequent use of photographs for environmental assessments informs collection management options; for example, Moir discusses choosing between analog and optical-disc-based systems for access to those collections.<sup>252</sup> In one case study, an environmental scientist's research collection provides a test bed for digital

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249Sarah Canby Jackson, "Risk in Processing: Harris County Pollution Control Records" (ARCHIVES \* RECORDS 2020: Creating Our Future: Virtual Joint Annual Meeting of the Council of State Archivists and the Society of American Archivists, Virtual Conference, 2020).

250Eira Tansey, "Regulation Requires Records: Access to Fracking Information in the Marcellus/Utica Shale Formations," *KULA: Knowledge Creation, Dissemination, and Preservation Studies* 2, no. 1 (2018), <https://doi.org/10.5334/kula.21>.

251G. J. Smith and J. Rae, "MODES(Archives) at the British Antarctic Survey Archives," *Journal of the Society of Archivists* 12, no. 2 (1991): 95–108, <https://doi.org/10.1080/00379819109514403>; Jennifer Laherty and Gary Motz, "Boundless Use of Indiana University's Biological Research Collections Possible in Partnership with IU Libraries" (IFLA World Library and Information Congress 2016 – Connections. Collaborations. Community, Columbus, OH: International Federation of Library Associations and Institutions, 2016), <https://library.ifla.org/id/eprint/1958>; Bruce Godfrey and Jeremy Kenyon, "The USDA's NAIP Imagery in Idaho: A Decade of Evolving Partnerships to Improve Access," *Library Trends* 65, no. 3: Collaboration in Agricultural Librarianship and Information Work (Winter 2017): 414–28, <https://doi.org/10.1353/lib.2017.0009>; Su Zhang et al., "New Mexico's Major Initiative on Digitizing, Archiving, and Web-Publishing Historical Aerial Photos," *Journal of Map & Geography Libraries* 18, no. 3 (2022): 185–208, <https://doi.org/10.1080/15420353.2022.2139789>.

252Michael B. Moir, "Finding Aids and Photographs: A Case Study in the Use of Analog Optical Disc Technology to Improve Access to Historical Images," *Archivaria* 36: Electronic Records (Autumn 1993): 74–86.

forensics and media workflows.<sup>253</sup> As Smith and Rae argue, archivist-built access tools from one repository can become more widely useful to other archives that lack the capacity to create their own custom tools.<sup>254</sup>

Multi-institution collaborations have formed to catalog newly legislated environmental records, digitize historical records related to water resources and undersea research, and produce structured data from the digitized records.<sup>255</sup> For instance, Radio et al. describe how they created an authority list about glaciers in the process of digitizing a collection of glacier photographs.<sup>256</sup> Improving archival description often requires collaborating with groups beyond the archives; these may be community or academic experts on a topic.<sup>257</sup> Archivists of environmental and scientific collections seek to improve their descriptive practices, for instance by creating metadata with native rather than settler place names, or naming the processes of extraction and decontextualization through which such materials came to be in archives.<sup>258</sup> Community

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253Alexandra Jokinen, “Digital Preservation, Eh?,” *bloggERS!* (blog), February 14, 2017, <https://saaers.wordpress.com/2017/02/14/digital-preservation-eh/>.

254Smith and Rae, “MODES(Archives).”

255Marie Allen, “Crossing Boundaries: Intergovernmental Records Cooperation, 1987-1997,” *The American Archivist* 60, no. 2: Special Issue on State Archival Programs (Spring 1997): 216–33, <https://doi.org/10.17723/aarc.60.2.f2q1641q4271286w>; Lisa Crane, “Navigating the #CLIRWater Project,” in *Wading Through the Past: Infrastructure, Indigeneity & the Western Water Archives*, ed. Char Miller (Claremont, CA: The Claremont Colleges Library, 2021), <https://pressbooks.claremont.edu/westernwatersymposium/chapter/chapter-1/>; Jeanine Finn and Catalina Lopez, “Bending Water Project at the Claremont Colleges,” in *Wading Through the Past: Infrastructure, Indigeneity & the Western Water Archives*, ed. Char Miller (Claremont, CA: The Claremont Colleges Library, 2021), <https://pressbooks.claremont.edu/westernwatersymposium/chapter/jeanine-finn-and-catalina-lopez-bending-water-project-at-the-claremont-colleges/>; Karen Urbec, Audrey Mickle, and Lisa Raymond, “Data on Deck: A Case Study of a Historic Undersea Film and Video Digitization Project,” *Journal of Contemporary Archival Studies* 10 (2023): Article 11.

256Erik Radio, Katie Fletcher, and Athea Merredyth, “Creating and Using a Glacier Authority Index to Document Climate Change,” *Cataloging & Classification Quarterly* 58, no. 5 (May 2020): 486–504, <https://doi.org/10.1080/01639374.2020.1762144>.

257Finn and Lopez, “Bending Water Project; Rose Barrowcliffe, “Searching for Ourselves: Analysing Metadata to Incorporate Indigenous Perspectives in Existing Archive Collections” (ICA 2021 Virtual Conference: Empowering Knowledge Societies, 2021), <https://www.youtube.com/watch?v=oTYyk-YpC-E>; Helen Houghton-Foster, “Learning from the Past: Exploiting Archives for Historical Water Management Research” (PhD, Liverpool, UK, University of Liverpool, 2021), <http://doi.org/10.17638/03140920>.

258Finn and Lopez, “Bending Water Project”; Bethany Anderson and Erik A. Moore, “Documenting Environmental and Natural History: The Role of Archivists in Stewarding Archives, Specimens, and Data in Settler Institutions” (Society of American Archivists Research Forum, Virtual Conference, 2022).

collaboration can dovetail with technical work. For instance, Barrowcliffe uses Named Entity Recognition to create a Butchulla (an Aboriginal Australian people) thesaurus, helping to automate some archival description tasks for records about Butchulla traditional lands.<sup>259</sup> The thesaurus provided a bridge into volunteer transcription work organized within Butchulla networks. In another example, Houghton-Foster describes how an archives mobilized volunteers to transcribe records, extract structured data, and add subject terms to improve catalog records.<sup>260</sup>

There's also a need to make data and records easier to find for climate and environmental researchers.<sup>261</sup> Bundsgaard and Sode-Pederson observe that subject-based search may be more useful than free-text search when looking for historical records, since different terms have been used over time for what would today be called environmental matters.<sup>262</sup> In data repositories, according to Jouzel and Masson-Delmotte, it's easier to interlink and verify climate records against one another if researchers consistently describe what's in their data and what one can use it for.<sup>263</sup> Exhibits, subject guides, and publications of records can each promote archives and improve access, in part by explaining how records can be of use to different audiences and

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259Barrowcliffe, "Searching for Ourselves."

260Helen Houghton-Foster, "'It's Good for Them to Feel Stretched': Collaborative Volunteer Projects at the Staffordshire Record Office," *Archives and Records* 44, no. 1 (2023): 120–37, <https://doi.org/10.1080/23257962.2022.2139229>.

261Houghton-Foster, "Learning from the Past"; P. Bryan Heidorn, "Shedding Light on the Dark Data in the Long Tail of Science," *Library Trends* 57, no. 2: Institutional Repositories: Current State and Future (Fall 2008): 280–99, <https://doi.org/10.17723/aarc.46.1.m4174034p84h0310>.

262Inge Bundsgaard and Anders Sode-Pederson, "Danish Strategies for New Methods of Digital Archival Description and Access," *Comma* 2004, no. 1 (2004): 67–76, <https://doi.org/10.3828/comma.2004.1.10>.

263Jean Jouzel and Valérie Masson-Delmotte, "Paleoclimates: What Do We Learn from Deep Ice Cores?," *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 5 (October 2010): 654–69, <https://doi.org/10.1002/wcc.72>.

purposes.<sup>264</sup> For instance, Houghton-Foster demonstrates how to use one set of archival records to write two different water management studies: a historical study and a quantitative analysis.<sup>265</sup>

### 3.3.5. Using archives and records about climate

The use of archival records for climate studies began as early as 1924, Catchpole and Moodie write, with scientists analyzing poetry, landscape painting, and contemporary accounts of major events.<sup>266</sup> Archivists wonder whether the evidence is sufficient to answer such research questions, and whether climate scientists' domain knowledge is equal to assessing the political content and contexts of unfamiliar sources. As Peterken observes, historical ecologists may use archival records, but so infrequently as to “remain a novice in their use.”<sup>267</sup> The scientific reuse of archival records presents some epistemological conflicts around what constitutes adequate evidence: “No doubt historians are used to dealing with gaps in the record, but scientists are not.”<sup>268</sup> According to Burant, the 1990s saw growing demand for archival access by “native communities trying to achieve self-discovery, primarily for the purposes of asserting land claims, but also to develop a sense of self-worth, to rediscover their own past, or for such private purposes as genealogy, and personal and medical histories.”<sup>269</sup> Stempler finds that researchers both use and cite archival collections about environmental activism, mostly from academic

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264Houghton-Foster, “Learning from the Past”; Vibeke Sloth Jakobsen and Kirsten Klüver, “Danmark Ekspeditionen 1906-1908: Literature – Archival Material – Photographs – Links,” in *Building Polar Networks: A Strategy for the Future*, ed. Silvia Sarti and Michela Cecconi (21st Polar Libraries Colloquy, Rome, Italy, 2006), 55–63, <https://doi.org/10.7939/R3Z31P46X>; Valentin P. Petrov, Elena I. Makarova, and Tatiana A. Fridman, “Significance of Academic Science in Industrial Development of the Barents Region: Historical Reconstruction in the Special Edition of the Archival Documents of the First Polar Conference of 1932 in Khibinogorsk,” in *Cool Libraries in a Melting World*, ed. Marcel Brannemann and Daria O. Carle (23rd Polar Libraries Colloquy, Bremerhaven, Germany: Helmholtz Gemeinschaft, 2010), 56–63, <https://doi.org/10.7939/R36M33K4V>.

265Houghton-Foster, “Learning from the Past.”

266A.J.W. Catchpole and D.W. Moodie, “Archives and the Environmental Scientist,” *Archivaria* 6 (Summer 1978): 113–36.

267G. F. Peterken, “The Use of Records in Woodland Ecology,” *Archives* 14, no. 62 (Autumn 1979): 85.

268Peterken, “Use of Records,” 86.

269Jim Burant, “The Acquisition of Visual Records Relating to Native Life in North America,” *Provenance, Journal of the Society of Georgia Archivists* 10, no. 1 (1992): 1–25.

libraries that don't explicitly describe the environmental connection.<sup>270</sup> Marsh et al. write that science-based anthropologists have trouble using archives and don't find them that useful, but could still be beneficial partners for archivists to develop their thinking on climate change.<sup>271</sup>

Kim argues that archivists' knowledge of these kinds of user needs can contribute to the design of green archives buildings.<sup>272</sup>

Records can support a variety of environment-related purposes. For example, geological repositories matter for mine safety and development, while scientists use natural history collections to compare present habitats with a historical baseline.<sup>273</sup> O'Gorman et al. find that historiography on climate in Australia and New Zealand follows a theme of climate knowledge as colonial control.<sup>274</sup> Several environmental histories emerge from archival absences as much as presences. According to Hatmaker, poor documentation of a coal ash disaster shows how official sources skirt any responsibility to affected people.<sup>275</sup> Agricultural extension service records unexpectedly offer evidence of rural people's resilience during environmental crisis, as Hobbs describes.<sup>276</sup> Schellnack-Kelly and Jiyane follow oral histories and research reports to show how commodity extraction marginalizes Indigenous knowledge and land stewardship.<sup>277</sup> And closed

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270 Amy Stempler, "The Use and Availability of Environmental Activism Collections in Academic Archives" (SAA Research Forum, New Orleans, LA, 2013), 6.

271 Diana E. Marsh et al., "Attitudes and Uses of Archival Materials among Science-Based Anthropologists," *Archival Science*, 2023, <https://doi.org/10.1007/s10502-023-09411-z>.

272 Sarah Kim, "Green Archives: Applications of Green Construction to Archival Facilities," *The Primary Source* 28, no. 1 (2009): Article 3, <https://doi.org/10.18785/ps.2801.03>.

273 Sarah Ramdeen, "Preservation Challenges for Geological Data at State Geological Surveys," *GeoResJ* 6 (June 2015): 213–20, <https://doi.org/10.1016/j.grj.2015.04.002>; Rebecca J. Rowe, "Looking to the Past to Plan for the Future: Using Natural History Collections as Historical Baselines," in *Stepping in the Same River Twice: Replication in Biological Research*, ed. Ayelet Shavit and Aaron M. Ellison (New Haven, CT: Yale University Press, 2017), 64–79.

274 Emily O'Gorman, James Beattie, and Matthew Henry, "Histories of Climate, Science, and Colonization in Australia and New Zealand, 1800–1945," *Wiley Interdisciplinary Reviews: Climate Change* 7, no. 6 (December 2016): 893–909, <https://doi.org/10.1002/wcc.426>.

275 Susie Hatmaker, "On Mattering: A Coal Ash Flood and the Limits of Environmental Knowledge," *Environmental Humanities* 4, no. 1 (May 2014): 19–39, <https://doi.org/10.1215/22011919-3614917>.

276 Colleen Hobbs, "Finding Your Family in Federal Record Group 33.6: Navigating the Agricultural Extension Service Archives," *Archival Issues* 36, no. 2 (2015): 22–35.

277 Isabel Schellnack-Kelly and Veli Jiyane, "Tackling Environmental Issues in the Digital Age Through Oral

administrative processes have limited the effectiveness of public processes around the U.S. Endangered Species List, according to Cramer.<sup>278</sup> Creative uses for records related to the environment include a musical composition keyed to CO<sub>2</sub> readings, and digital displays of records about a particular environment.<sup>279</sup> Indigenous people have used traditional materials housed in archives to participate in international environmental protection regimes, and are developing map-based digital archives that “[hew] much more closely to an Indigenous way of understanding culture in relation to the land.”<sup>280</sup>

There are numerous examples in the literature of teaching environmental activities with archives, at all levels of formal education. Carbajal notes that K-12 educational standards in the U.S. require primary source education, creating opportunities to introduce students to climate-related topics through archives.<sup>281</sup> In a case study by Corbiere, archival documents and wire recordings proved useful to elementary school curriculum based on an Anishiinaabeg story about birch bark, an example of “traditional ecological knowledge”<sup>282</sup> Archivists have embedded in undergraduate courses on the history of medicine, environmental history, and ecology.<sup>283</sup>

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Histories and Oral Traditions from the iSimangaliso Wetland,” *Historia* 62, no. 2 (November 2017): 112–29, <https://doi.org/10.17159/2309-8392/2017/v62n2a6>.

278 Benjamin W. Cramer, “Nearly Extinct in the Wild: The Vulnerable Transparency of the Endangered Species List,” *The Journal of Civic Information* 3, no. 2 (August 2021), <https://doi.org/10.32473/joci.v3i2.128355>.

279 William Denton, “Anthropocene Librarianship Comes in Many Forms. One Is the Making of Art,” in *Miskatonic University Press* (Everything Under the Sun: York’s Engagement in Vital Environment and Climate Change Issues, Toronto, ON, 2016), <https://www.miskatonic.org/2016/11/17/manyforms/>; Mitchell Whitelaw, “Mashups and Matters of Concern: Generative Approaches to Digital Collections,” *Open Library of Humanities* 4, no. 1 (April 2018): 1–28, <https://doi.org/10.16995/olh.291>.

280 Timothy B. Powell, “The Role of Indigenous Communities in Building Digital Archives,” in *Afterlives of Indigenous Archives: Essays in Honor of the Occom Circle*, ed. Ivy Schweitzer and Gordon Henry (Hanover, NH: Dartmouth College Press, 2019), 27; Petronella Vaarzon-Morel and Luke Kelly, “Enlivening People and Country: The Lander Warlpiri Cultural Mapping Project,” in *Archival Returns: Central Australia and Beyond*, ed. Linda Barwick, Jennifer Green, and Petronella Vaarzon-Morel (Honolulu & Sydney: University of Hawai’i Press & Sydney University Press, 2019), 111–38, <http://hdl.handle.net/10125/24880/>.

281 Carbajal, “Home of Memory.”

282 Alan Ojiig Corbiere, “The Audio of Text: Art of Tradition,” in *Afterlives of Indigenous Archives: Essays in Honor of the Occom Circle*, ed. Ivy Schweitzer and Gordon Henry (Hanover, NH: Dartmouth College Press, 2019), 208.

283 Amanda H. Brown, Barbara Losoff, and Deborah R. Hollis, “Science Instruction Through the Visual Arts in Special Collections,” *Portal: Libraries and the Academy* 14, no. 2 (2014): 197–216; Christy Fic, “Working as an Embedded Archivist in an Undergraduate Course: Transforming Students into Scholars through an Archival

Programs often encourage students to create as well as examine records: making digital exhibits from oral histories and archival photographs, or gathering new observational data from areas documented in historical records.<sup>284</sup> In Brazil, as Tenaglia et al. describe, university archival science programs pair with archival staffs to co-develop environmental programs and outreach that use collections.<sup>285</sup> Lennon and Collins observe how young people come to see themselves as part of climate response by engaging in scientific and archival practices, as they document urban environments amid slow violence and extreme weather events.<sup>286</sup>

### 3.4. Evaluating archival work: practices, risks, and impacts

One popular response to climate crisis is to evaluate the effectiveness of archival work: How well are archives managing climate-related records? What are climate risks to archives? How well are they prepared for disaster? What are their environmental impacts? Some call for better measurements or propose guidelines and standards to improve effectiveness across these areas.

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- Workshop Series,” *The American Archivist* 81, no. 2 (Fall/Winter 2018): 290–309, <https://doi.org/10.17723/0360-9081-81.2.290>; Chloe Morse-Harding and Colleen Hitchcock, “A Review of Opportunities for Science Research and Place-Based Science Storytelling in the Undergraduate Classroom Utilizing Archival Material” (Humanities for STEM Symposium, Brooklyn, NY, 2018), <https://doi.org/10.17605/OSF.IO/2CX6T>; Meghan Clark, Hannah Toms, and Matthew D. Lassiter, “Give Earth a Chance: History Undergraduates and Environmental Activism in the Archives,” in *Teaching Undergraduates with Archives*, ed. Nancy Bartlett, Elizabeth Gadelha, and Cindy Nofziger (Ann Arbor, MI: Maize Books, 2019), 13–30, [https://www.fulcrum.org/epubs/zk51vj51w?locale=en#/6/16\[Bartlett-0008\]!/4/2\[ch01\]/2/2\[p12\]/1:0](https://www.fulcrum.org/epubs/zk51vj51w?locale=en#/6/16[Bartlett-0008]!/4/2[ch01]/2/2[p12]/1:0).
- 284Yasmin B. Kafai and Anne J. Gilliland-Swetland, “The Use of Historical Materials in Elementary Science Classrooms,” *Science Education* 85, no. 4 (July 2001): 349–67; Wendy Wasman et al., “Branching Out: Using Historical Records to Connect with the Environment,” *Journal of Interactive Technology and Pedagogy*, no. 14: Themed Issue on Teaching&Research with Archives (January 2019), <https://cuny.manifoldapp.org/read/branching-out-using-historical-records-to-connect-with-the-environment-bc6ec4a0-1889-4ff3-b52b-2986e74e8630/section/8a1fa60d-5e75-4587-abf6-231d82f5220d>; Alston Brake Cobourn et al., “Toward Metaliteracy and Transliteracy in the History Classroom: A Case Study Among Underserved Students,” *The American Archivist* 85, no. 2 (Fall/Winter 2022): 587–608, <https://doi.org/10.17723/2327-9702-85.2.587>.
- 285Mônica Tenaglia et al., “The Training of Archivists and Access to Information about the Environment and the Amazon in Brazil,” *Comma* 2021, no. 2 (2023): 331–43, <https://doi.org/10.3828/coma.2021.30>.
- 286Diana Lennon and Theresa Collins, “Borrowing a Bird’s Eye: Teaching Urban-Based Environmental Science with Humanities and Archival Resources” (Humanities for STEM Symposium, Brooklyn, NY, 2018), <https://doi.org/10.17605/OSF.IO/YTXVG>.

### 3.4.1. Evaluating records management

The literature includes evaluations of climate records and data programs in government, activist, corporate, and academic contexts. Establishing record keeping processes at major international environmental governance bodies begins with analyzing the functions of departments and the use of systems, and determining record keeping structures accordingly.<sup>287</sup> At the U.S. Environmental Protection Agency (EPA), evaluations have reviewed records management, assessed the records implications of re-organizing regulatory dockets, and led to adopting technologies like scanning, optical media, and a unified electronic records management system.<sup>288</sup> According to most assessments, policy and conduct present greater challenges to compliance than technical systems. In South Africa, one study finds that planning for digitization and digital preservation of Indigenous knowledge remains insufficient, while another finds that staff at a national park archive, library, and museum are mostly unaware of legislation relevant to their institutions.<sup>289</sup> When local government is responsible for day-to-day environmental protection, Wickman argues, the state of their records – and whose interests the records serve – increasingly come to matter.<sup>290</sup> At the local level, Zimmerman describes how archivists act as

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287 María José del Olmo, “Matrix: A Double Functional Business Classification Scheme,” *Records Management Journal* 16, no. 3 (2006): 159–68, <https://doi.org/10.1108/09565690610713200>; Jingwen Yang, “A Case Study – WhatsApp Records Capture,” *Digital Preservation Coalition* (blog), November 27, 2018, <https://www.dpconline.org/blog/wdpd/whatsapp-records-capture>.

288 “Records Management in the Environmental Protection Agency: A NARA Evaluation” (Washington, DC: National Archives and Records Administration, February 1992), HathiTrust, <https://hdl.handle.net/2027/uiug.30112101562376>; Rachel Senner Van Wingen, Fred Hathorn, and J. Timothy Sprehe, “Principles for Information Technology Investment in U.S. Federal Electronic Records Management,” *Journal of Government Information* 26, no. 1 (1999): 33–42; Michael L. Miller, “Disc Players, the Records Manager/Archivist, and the Development of Optical Imaging Applications,” *The American Archivist* 58, no. 2 (Spring 1995): 170–80, <https://doi.org/10.17723/aarc.58.2.d30p0068350073u1>; Lauren Fernandez and J. Timothy Sprehe, “Integrating an ERDM in an IT Environment,” *Information Management Journal* 37, no. 4 (August 2003): 58–65.

289 Tolulope Balogun and Trywell Kalusopa, “A Framework for Digital Preservation of Indigenous Knowledge System (IKS) in Repositories in South Africa,” *Records Management Journal* 31, no. 2 (2021): 176–96, <https://doi.org/10.1108/RMJ-12-2020-0042>; Nkholedzeni Sidney Netshakhuma, “Analysis of the Alliance of Archives, Libraries, and Museums of South Africa National Parks: Kruger National Park,” *IFLA Journal* 47, no. 1 (March 2021): 65–77, <https://doi.org/10.1177/0340035220912514>.

290 Danielle Wickman, “Evolution or Revolution? The Changing Role of City Archives in Australia,” *Comma* 2014,

liaisons between Geographic Information Systems (GIS) archives and agencies creating and using records for environmental stewardship projects.<sup>291</sup> But, as Morris et al. write, “contact fatigue” plagues local government GIS producers and stewards as they attempt to field innumerable small data requests, so they look for ways to resolve frictions “at scale.”<sup>292</sup>

Turning to activist contexts, threats to U.S. climate data stores during the Trump presidency mobilized a number of volunteer efforts to download data sets from government websites, package them with descriptive and technical metadata, and upload them to repositories like the Internet Archive.<sup>293</sup> These operations proved more effective as education than preservation, largely because participants didn't have a cogent analysis of the threats to particular data or “how and why these particular data are collected by federal agencies in the first place.”<sup>294</sup> Ray finds that campaigns like DataRescue and the Environmental Data Governance Initiative (EDGI) struggled to define their scope and goals, but did have an indirect impact in pressuring EPA to institute internal records training.<sup>295</sup> Regulatory reforms would more effectively protect records than volunteer archiving, Lamdan argues, but austerity presents the greatest challenge to environmental records preservation and access.<sup>296</sup> Rather than removing data from websites,

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no. 1–2 (2015): 121–34, <https://doi.org/10.3828/comma.2014.11>.

291Ann Zimmerman, “Partnerships and Opportunities: The Archival Management of Geographic Information Systems,” *Archival Issues* 20, no. 1 (1995): 23–38.

292Steve Morris, James Tuttle, and Jefferson Essic, “A Partnership Framework for Geospatial Data Preservation in North Carolina,” *Library Trends* 57, no. 3 (Winter 2009): 516–40, <https://doi.org/10.1353/lib.0.0050>.

293Sarah Lamdan, “Lessons from DataRescue: The Limitations of Grassroots Climate Change Data Preservation and the Need for Federal Records Law Reform,” *University of Pennsylvania Law Review Online* 166, no. 1 (2018): Article 12.

294Dawn Walker et al., “Practicing Environmental Data Justice: From Datarescue to Data Together,” *Geo: Geography and Environment* 5, no. 2 (2018): 2; Eric Johnson and Alicia Kubas, “Spotlight on Digital Government Information Preservation: Examining the Context, Outcomes, Limitations, and Successes of the DataRefuge Movement,” *In the Library With the Lead Pipe*, February 7, 2018, <http://www.inthelibrarywiththeleadpipe.org/2018/information-preservation/>.

295Katharine W. Ray, “A Motivating Climate: An Exploratory Study of the DataRescue Movement” (Master of Science, Chapel Hill, NC, University of North Carolina at Chapel Hill, 2018), <https://doi.org/10.17615/s089-rb86>.

296In the U.S., there are no legal provisions specific to destroying born-digital content, nor legal mandate to archive or provide access to archives of all government websites. Lamdan argues that the Federal Records Act (FRA) should be revised to treat removal of online government content as a kind of records destruction; preserve online

“agencies can effectively starve online data stores by failing to provide the resources required to fill them.”<sup>297</sup>

Finally, the literature includes evaluations of research data management. A 1989 assessment of snow data collected across the U.S. calls for better data collection, automating quality assurance, and dedicating more staff to manual review – concerns that data curators would share for decades.<sup>298</sup> Since then, curation initiatives have emerged at different times as various climate-adjacent disciplines mature. Climate data curators often publish articles that share (for example) format updates, changes in quality control processes, corrections for bias and error, and future data archive activities.<sup>299</sup> According to Jacobs and Worley, elements of successful climate data curation include robust storage facilities, backup plans, science-educated staff, the use of non-proprietary formats, consistent staffing levels, national and international partnerships, and stable funding.<sup>300</sup> There are many climate data repositories but a 2014 assessment found that only a few had “explicit preservation policies,” appraisal criteria, or plans for sustainability or environmental disaster.<sup>301</sup>

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platforms used in government affairs; and implement “a FOIA-like citizen suit provision” for online content and broken links. Lamdan, “Lessons from DataRescue,” 246.

297Lamdan, “Lessons from DataRescue,” 244.

298David A. Robinson, “Evaluation of the Collection, Archiving and Publication of Daily Snow Data in the United States,” *Physical Geography* 10, no. 2 (1989): 121.

299For an example of this kind of report, see: Eric Freeman et al., “ICOADS Release 3.0: A Major Update to the Historical Marine Climate Record,” *International Journal of Climatology* 37, no. 5 (April 2017): 2211–32, <https://doi.org/10.1002/joc.4775>.

300Clifford A. Jacobs and Steven J. Worley, “Data Curation in Climate and Weather: Transforming Our Ability to Improve Predictions through Global Knowledge Sharing,” *International Journal of Digital Curation* 4, no. 2 (2009), <https://doi.org/10.2218/ijdc.v4i2.94>.

301Chung-Yi Hou, Cheryl A. Thompson, and Carole L. Palmer, “Profiling Open Digital Repositories in the Atmospheric and Climate Sciences: An Initial Survey,” *Proceedings of the American Society for Information Science and Technology* 51, no. 1 (January 2014): 3.

### 3.4.2. Assessing climate risks: geography, organizations, costs

Natural disasters threaten organizational records, Egbuji writes, so risk management should mitigate this with disaster recovery planning.<sup>302</sup> As Sugimoto observes, not only sudden events but also the gradual accumulation of harm presents risks: “Environmental and social changes may cause serious damage, which may happen slowly but can be serious.”<sup>303</sup> Sloggett and Scott argue that the very idea of cultural heritage requires holding an idea of risk to the heritage; archivists and other cultural heritage workers should tell stories about that risk.<sup>304</sup> As seen in this literature, it's possible to evaluate climate risks to archives by interrelated aspects of geography, institutional context, and the costs involved.

Many emphasize the risks due to geography. Bhattacharjee stresses that “since preventive measures depend directly on the environment, weather and climate conditions, it is essential to understand the weather and climate of the particular place where manuscripts are kept for preservation.”<sup>305</sup> As Pearlstein describes, one method is to monitor environmental conditions one floor at a time, comparing findings to outdoor readings like temperature and relative humidity.<sup>306</sup> Case studies often pair geography-related and organizational risks like funding, staffing, and building maintenance.<sup>307</sup> Civallero describes how one archive is “in constant danger” thanks to

302Angel Egbuji, “Risk Management of Organisational Records,” *Records Management Journal* 9, no. 2 (August 1999): 93–116, <https://doi.org/10.1108/EUM000000007245>.

303Shigeo Sugimoto, “Digital Archives and Metadata as Critical Infrastructure to Keep Community Memory Safe for the Future – Lessons from Japanese Activities,” *Archives and Manuscripts* 42, no. 1: Special Issue: Participatory archives in a world of ubiquitous media (2014): 61–72, <https://doi.org/10.1080/01576895.2014.893833>.

304Robyn Sloggett and Marcelle Scott, “The Story of Climate Change: Narratives As Influencers,” in *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott (London: Routledge, 2023), 10–26, <https://doi.org/10.4324/9781003163312-2>.

305Sudip Bhattacharjee, “Curation of Manuscripts in the Tropical Savanna Climate of North-Eastern India,” *IFLA Journal* 48, no. 2 (June 2022): 282–88, <https://doi.org/10.1177/03400352211030942>.

306Ellen Pearlstein, “Teaching Sustainable Collection Care,” *Journal of the American Institute for Conservation* 56, no. 2: Collection Care (2017): 113–25, <https://doi.org/10.1080/01971360.2016.1217726>.

307Bhattacharjee, “Curation of Manuscripts”; Sindiso Bhebhe, Mehluli Masuku, and Patrick Ngulube, “Infrastructural Challenges on Archives and Recordkeeping at the National Archives of Zimbabwe,” *Journal of the South African Society of Archivists* 46 (2013): 47–62; Stella Ngozi Anasi, Ahiaoma Ibegwam, and Stella Olubukunmi Oyediran-Tidings, “Preservation and Dissemination of Women’s Cultural Heritage in Nigerian

its proximity to the ocean, harsh weather, isolation, and “lack of economic and human resources.”<sup>308</sup> Preservation challenges in tropical climates include rapid deterioration of materials as well as colonial legacies of limited resources, political unrest, and national governments that undervalue cultural heritage.<sup>309</sup> Anasi et al. write that “climate is the leading barrier to preservation of women’s cultural heritage materials” at university libraries in Southern Nigeria, with funding another major problem.<sup>310</sup> In the same region, Onyeji and Onyeji describe how materials from a folk music recording project can't be stored in the geographic location closest to the materials' origin, and the ability (or inability) to control storage environments limits the scope of projects.<sup>311</sup> What can archives do that falls short of standards but works with what's available?

Continuing the catalog of geographical concerns, UK collection managers worry about extreme weather, heat, and pests, while archives in Canada will experience higher temperatures and heightened risk of wildfire and drought over the next six decades.<sup>312</sup> The risk of losing land altogether threatens low-lying Pacific island nations' archives and sovereignty, as Gordon-Clark describes.<sup>313</sup> Mazurczyk et al. propose a quantitative measure of “cumulative risk assessment”

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University Libraries,” *Library Review* 62, no. 8/9 (2013): 472–91, <https://doi.org/10.1108/LR-11-2012-0126>; Zawedde Nsibirwa, Ruth Hoskins, and Christine Stillwell, “The Effects of Climate Change in Preserving the Past and Enhancing the Future of Legal Deposit in South Africa,” *Mousaion* 31, no. 2 (2013): 115–34.

308Edgardo Civallero, “Galapagos inside an Archive — for the Community” (IFLA World Library and Information Congress 2019 – Libraries: dialogue for change, Athens, Greece: International Federation of Library Associations and Institutions, 2019), 5.

309René Teygeler, “Preservation of Archives in Tropical Climates. An Annotated Bibliography” (Paris/The Hague/Jakarta: International Council on Archives/National Archives of the Netherlands/National Archives of the Republic of Indonesia, 2001).

310Stella Ngozi Anasi, Ahiaoma Ibegwam, and Stella Olubukunmi Oyediran-Tidings, “Preservation and Dissemination of Women’s Cultural Heritage in Nigerian University Libraries,” *Library Review* 62, no. 8/9 (2013): 485.

311Elizabeth Onyeji and Christian Onyeji, “After the Collection, What Next? Challenges of Preservation of Folk Music Recordings in an Unstable Climatic Environment in Nigeria (Library of Folk Music of Nigeria Project in Focus,” *Fontes Artis Musicae* 70, no. 2 (June 2023): 127–41, <https://doi.org/10.1353/fam.2023.a901181>.

312Peter Brimblecombe, “Refining Climate Change Threats to Heritage,” *Journal of the Institute of Conservation* 37, no. 2 (2014): 85–93, <https://doi.org/10.1080/19455224.2014.916226>; Amanda Oliver, “The Impact of Climate Change on Canadian Archives,” *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 284–302, <https://doi.org/10.1108/RMJ-10-2020-0035>.

313Matthew Gordon-Clark, “Paradise Lost? Pacific Island Archives Threatened by Climate Change,” *Archival Science* 12, no. 1 (March 2012): 51–67, <https://doi.org/10.1007/s10502-011-9144-3>.

accounting for sea level rise, storm surge, 500-year floodplain, temperature change, and precipitation change, weighting flood exposure highest in the cumulative score.<sup>314</sup> Although few U.S. archives are at risk of exposure by every factor, nearly all are at risk from at least one. Anderson and Ormsby describe how, with ample internal research on risks, climate adaptation measures at U.S. National Archives and Records Administration (NARA) facilities have included sea walls and flood walls to protect from inundation, grazing goats to reduce wildfire risk, and using underground storage facilities in tornado-prone regions.<sup>315</sup> In general, however, limited data on U.S. archives and their locations suggests that small and underrepresented archives may be left out of efforts to mitigate climate exposure.<sup>316</sup>

Turning to institutional contexts, multiple risks inhere in the politics of keeping records. For example, Tansey and Arnold observe that corporations and politicians have multiple incentives to resist environmental regulations and undermine the record keeping that supports them.<sup>317</sup> Government secrecy around records of environmental contamination puts people working and living around contaminated sites at risk, Bowman writes.<sup>318</sup> As Shepherd et al. describe, records workers balance risks of disclosing administrative data – such as harms, privacy and confidentiality violations, and misuse – against the potential benefits for research reuse.<sup>319</sup>

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314Tara Mazurczyk et al., “American Archives and Climate Change: Risks and Adaptation,” *Climate Risk Management* 20 (2018): 111–25, <https://doi.org/10.1016/j.crm.2018.03.005>.

315Kevin Anderson and Mark Ormsby, “NARA’s Path Forward on Archival Environments and Climate Change” (ARCHIVES \* RECORDS 2023: Joint Annual Meeting of the Council of State Archivists and the Society of American Archivists, Washington, DC, 2023).

316Eira Tansey and Ben Goldman, “Fonds Farewell: Mapping American Archival Vulnerabilities Due to Climate Change” (Society of American Archivists Research Forum, Atlanta, GA, 2016); Ben Goldman, Eira Tansey, and Whitney Ray, “Gathering and Documenting Archival Repository Location Data” (RBMS 2018, New Orleans, LA, 2018), <https://repositorydata.wordpress.com/2018/06/29/rbms-2018-presentation/>.

317Eira Tansey and Hillel Arnold, “For Good Measure: The Role of Regulatory Records in Environmental Maintenance” (Society for the History of Technology, Philadelphia, PA, 2017), <https://scholar.uc.edu/show/d217qp51v>.

318Spencer Bowman, “The Radioactive Dirt: An Analysis of the Role Information Has Played Throughout Hanford’s History,” *DtTP: Documents to the People* 47, no. 4 (Winter 2019): 17–21, <https://doi.org/10.5860/dtTP.v47i4.7214>.

319Elizabeth Shepherd et al., “Risk Identification and Management for the Research Use of Government Administrative Data,” *Records Management Journal* 30, no. 1 (2019): 101–23, <https://doi.org/10.1108/RMJ-03->

Organizational risks take more concrete, material forms as well. Masilela and Nel-Sanders' study of a South African environmental agency identifies risks to “data and information security governance” that include “large scale power outages” and failing to include records management in business continuity planning.<sup>320</sup> In Mali, Dong observes, extreme temperatures and intermittent electricity mean choosing between running air conditions and running computers in archives, meaning limited sustainability for digital collections or projects.<sup>321</sup>

Within cultural heritage organizations, Fatorić and Seekamp observe, it's difficult to map out climate-related steps when planning, implementation, guidelines, and procedures are lacking.<sup>322</sup> Members may not sufficiently understand the potential of climate disaster and adaptation to affect cultural heritage. Or they may carry responsibility without agency or the authority to make changes – similar to how Demb and Tansey characterize records managers.<sup>323</sup> But in mapping relationships among these barriers, everything points back to funding. Organizations' ability to build internal capacity and “[include] the traditional knowledge and skills of local communities in climate adaptation efforts” will determine their success, but austerity budgeting and understaffing heighten the risks facing archives due to environmental disaster.<sup>324</sup> Organizational conditions exposing cultural heritage to climate risk include uncatalogued collections, archives

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320L. Masilela and D. Nel-Sanders, “Data and Information Security Governance: A Prerequisite for Improved Protection of Public Sector Data and Information Practices,” *Administratio Publica* 31, no. 2 (June 2023): 196.

321Lorraine Dong, “The Economics and Politics of International Preservation Collaborations: A Malian Case Study,” *Archival Science* 12 (September 2012): 267–85, <https://doi.org/10.1007/s10502-011-9156-z>.

322Sandra Fatorić and Erin Seekamp, “Securing the Future of Cultural Heritage by Identifying Barriers to and Strategizing Solutions for Preservation under Changing Climate Conditions,” *Sustainability* 9, no. 11 (November 2017), 7.

323Sarah R. Demb and Eira Tansey, “Special Issue Editorial,” *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 217–21, <https://doi.org/10.1108/RMJ-04-2021-0017>.

324Fatorić and Seekamp, “Securing the Future,” 17; Hilda Teresa Ayala-González, Archives at the Intersection of Postcolonialism and Climate Change: Reflections from Puerto Rico Post-Maria with Hilda Teresa Ayala-González, interview by Amye McCarther, January 30, 2019, <https://medium.com/metropolitan-archivist/archives-at-the-intersection-of-postcolonialism-and-climate-change-bcbcc800b1f5>; Eira Tansey, “A Green New Deal for Archives Preview,” November 7, 2022, <https://eiratansey.com/2022/11/07/a-green-new-deal-for-archives-preview/>.

without funding, and archival workers lacking the language and cultural skills to make sense of collections material, according to Sloggett and Scott.<sup>325</sup> Both personal and organizational archives are vulnerable in climate emergencies, particularly when stored in homes.<sup>326</sup> In Australia, Wessell and Thorpe write, local or regional, independent, volunteer-run archives in rural areas are more vulnerable to extreme weather events and have less support than large or national institutions.<sup>327</sup> In Greece, however, Giannikou describes how economic crisis severely curtails risk mitigation options for the *national* institution, the General State Archives: “Thus decline of funding resulted in inability to run regular maintenance and cover the costly repairs of the increasing building failures.”<sup>328</sup> After two floods in seven years, archivists' only option was to move collections into areas less prone to weakness in the building envelope. Tansey argues that vital public records are “the most important priority facing American archives” because they “receive the most use” and “are especially vulnerable to becoming unfunded mandates.”<sup>329</sup>

Another way to evaluate risks is to anticipate costs. or just how bad things can get.

Significant environmental crises, such as drought, lead to loss of cultural knowledge: Sloggett and Scott write that if the environment doesn't behave the way it has, then people can't carry on the same methods of interacting with it.<sup>330</sup> Shifts in the climate accelerate the impacts of biotic

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325Robyn Sloggett and Marcelle Scott, “Finding Unexpected Data from the Historical Record,” in *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott (London: Routledge, 2023), 27–41, <https://doi.org/10.4324/9781003163312-3>.

326Rebecca Dirksen, “Haiti’s Hidden Archives and Accidental Archivists: A View on the Private Collections and Their Keepers at the Heart of Safeguarding the Nation’s Classical Music Heritage,” *Latin American Music Review* 40, no. 1 (Spring/Summer 2019): 59–88, <https://doi.org/10.7560/LAMR40103>; Harter and Rasico, “File soon. June, 1987.”

327Adele Wessell and Clare Thorpe, “Keeping the Archives above Water: Preserving Regional Heritage in Times of Accelerated Climate Change,” *Archival Science* 23 (2023): 609–27, <https://doi.org/10.1007/s10502-023-09424-8>.

328Maria Giannikou, “Flood Risk Analysis and Assessment: The Case of the General State Archives of Greece” (IFLA World Library and Information Congress 2019 – Libraries: dialogue for change, Athens, Greece: International Federation of Library Associations and Institutions, 2019), 3.

329Burkely Hermann, “Interview with Eira Tansey about ‘A Green New Deal for Archives,’” *Issues & Advocacy* (blog), December 1, 2023, <https://issuesandadvocacy.wordpress.com/2023/12/01/interview-with-eira-tansey-about-a-green-new-deal-for-archives/>.

330Robyn Sloggett and Marcelle Scott, “The Local in the Global: Community Impact and Responses,” in *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott (London: Routledge,

agents and chemical damage on collection materials, while leading to structural building problems as many small issues accumulate.<sup>331</sup> The need for staff training and regular maintenance are recurring themes. Keeping ahead of energy prices and government climate policies will also require more investment from archives, say Thickett and Lankester.<sup>332</sup> As well as these slowly accruing costs, acute disasters destroy records and facilities, preventing access and service provision.<sup>333</sup> Some claim that digital record keeping is more robust than paper-based systems in climate disasters.<sup>334</sup> Others project that “long term or permanent loss of the power grid” would make digital archives unusable along with many other systems.<sup>335</sup>

### 3.4.3. Evaluating disaster planning

Every archives needs a disaster plan, which staff should develop and test methodically.<sup>336</sup> However, study after study on disaster preparedness concludes that inadequate staffing, training, and funding are common factors putting archives, records, facilities, and organizations at risk. As Jørgensen et al. observe, lack of disaster preparation may go along with other gaps in planning,

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2023), 118–36, <https://doi.org/10.4324/9781003163312-8>.

331 Sesana et al., “Climate Change Impacts”; Olubanke M. Bankole, “A Review of Biological Deterioration of Library Materials and Possible Control Strategies in the Tropics,” *Library Review* 59, no. 6 (2010): 414–29, <https://doi.org/10.1108/00242531011053931>; Jonathan Ashley-Smith, “Climate for Culture: Report on Damage Functions in Relation to Climate Change,” October 27, 2013, [https://www.climateforculture.eu/index.php?inhalt=download&file=pages/user/downloads/project\\_results/D\\_04.2\\_final\\_publish.pdf](https://www.climateforculture.eu/index.php?inhalt=download&file=pages/user/downloads/project_results/D_04.2_final_publish.pdf); Zawedde Nsibirwa, “Building the South African Nation through Legal Deposit in Times of Rapid Climate Change: The Structural Design of the Msunduzi Municipal Library,” *Mousaion* 34, no. 3 (2016): 104–22.

332 David Thickett and Paul Lankester, “Critical Knowledge Gaps in Environmental Risk Assessment and Prioritising Research,” *Collections: A Journal for Museum and Archives Professionals* 8, no. 4 (Fall 2012): 281–96, <https://doi.org/10.1177/155019061200800403>.

333 Nikki Swartz, “Dealing with Disaster,” *Information Management Journal* 40, no. 4 (August 2006): 28–34; Cajetan Okechukwu Onyeneke, “Impact of Disaster on Access to Records of National Archives of South East, Nigeria,” *Collection Building* 36, no. 2 (April 2017): 63–68, <https://doi.org/10.1108/CB-12-2016-0033>.

334 Sugimoto, “Digital Archives”; Nkholedzeni Sidney Netshakhuma, “The Link Between Climate Change and Digitization of Archives in South Africa,” in *Handbook of Research on Sustainable Development Goals, Climate Change, and Digitalization* (Hershey, PA: Engineering Science Reference, 2022), 537–52.

335 Demb and Tansey, “Special Issue Editorial,” 217.

336 Julia Niebuhr Eulenberg, “Disaster Recovery Planning for the Corporate Archive,” in *Corporate Archives and History: Making the Past Work*, ed. Armita A. Jones and Philip L. Cantelon (Malabar, FL: Krieger Publishing Company, 1993), 91–108; Rebecca Fraimow, “Disaster Planning: Do Something,” *Project\_arcc* (blog), October 19, 2015, <https://projectarcc.org/2015/10/19/disaster-planning-do-something/>.

for instance collections care and preservation.<sup>337</sup> Documents and data are often not included in planning, or forgotten in emergencies as personal safety takes priority.<sup>338</sup> Archival workers have issued repeat calls for high-level guidance, centralized reference information, and rigorous training for disaster preparation, for example by partnering national archives and libraries with disaster management agencies.<sup>339</sup> Training, plans, and preventative measures should reflect archives-specific needs and regionally common types of disaster.<sup>340</sup> Uneven resource distribution among archives and countries calls for regional collaborative approaches to disaster preparation, Ngulube argues.<sup>341</sup> Wherever possible, Ezennia recommends, disaster preparedness begins with building site selection and having collection stewards and architects work together.<sup>342</sup> Unfortunately, as Najjar and Wani describe, some archives buildings aren't purpose-built, don't account for the possibility of disaster, and don't involve preservation experts in the design and

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337Corinne Jörgensen, Paul F. Marty, and Kathy Braun, "Connecting to Collections in Florida: Current Conditions and Critical Needs in Libraries, Archives, and Museums," *The Library Quarterly: Information, Community, Policy* 82, no. 4 (October 2012): 453–76.

338Franklyn McDonald, "Emergency Planning for Protection of Records," in *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, ed. Hyacinth Brown (Kingston, Jamaica: Jamaica Library Association, 1989), 7–10; Sidney Netshakhuma and Itumeleng Khadambi, "Assess Increased Flooding on the Archiving System of the South African National Parks, South Africa," *Comma* 2021, no. 2 (2023): 363–70, <https://doi.org/10.3828/coma.2021.32>.

339Norma Amenu-Kpodo et al., "Disaster Preparedness in Some Jamaican Libraries: Results of a Pre-Hurricane Gilbert Survey," in *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, ed. Hyacinth Brown (Kingston, Jamaica: Jamaica Library Association, 1989), 31–38; Patrick Ngulube, Cynthia Kefilwe Modisane, and Nampombe Mkeni-Saurombe, "Disaster Preparedness and the Strategic Management of Public Records in South Africa: Guarding against Collective Cultural Amnesia," *Information Development* 27, no. 4 (November 2011): 239–50, <https://doi.org/10.1177/0266666911417641>; Catherine Asamoah, Harry Akussah, and Adams Musah, "Recordkeeping and Disaster Management in Public Sector Institutions in Ghana," *Records Management Journal* 28, no. 3 (2018): 218–33, <https://doi.org/10.1108/RMJ-01-2018-0001>.

340Onyeneke, "Impact of Disaster"; Graham Matthews, Yvonne Smith, and Gemma Knowles, "The Disaster Control Plan: Where Is It At?," *Library & Archival Security* 19, no. 2 (2004): 3–23, [https://doi.org/10.1300/J114v19n02\\_02](https://doi.org/10.1300/J114v19n02_02); Elsa Mariani Hernández, Interview: Ana G. Méndez University, Carolina Campus 's Library, interview by Dinah M. Wilson Freitas, April 2019, <https://scalar.usc.edu/works/prlamrecovery/interviewagmcarolinacampu>.

341Patrick Ngulube, "Disaster and Security Management in Public Archival Institutions in ESARBICA Region," *African Journal of Library, Archives and Information Science* 15, no. 1 (April 2005): 15–23.

342Steve E. Ezennia, "Flood, Earthquake, Libraries and Library Materials," *Library & Archival Security* 13, no. 1 (1995): 21–27, [https://doi.org/10.1300/J114v13n01\\_03](https://doi.org/10.1300/J114v13n01_03).

construction processes.<sup>343</sup> In such cases, improving the infrastructure with limited resources must be done “by piecemeal approach.”<sup>344</sup>

Common but preventable procedural issues in disaster response include inaccurate phone trees, poor collections documentation, inadequate supplies, and trouble navigating hazardous environments.<sup>345</sup> A variety of staff participate as responders, Muir and Shenton find, but those in different roles have uneven knowledge of collections and building layouts.<sup>346</sup> When it comes to collections storage, Langelier and Wright observe, “what is extremely useful for reference and retrieval purposes is not always advantageous for disaster planning.”<sup>347</sup> Lunde and Smith suggest that establishing multiple disaster teams for different response and recovery tasks is more effective than concentrating responsibility in a small group.<sup>348</sup> But in an emergency, Centeno urges, archives workers shouldn't “wait for permission” to act.<sup>349</sup> The literature shows that even adequate training and procedures don't guarantee preparation. At a provincial archives in South Africa, for instance, Netshakhuma finds that resource attrition is a major source of climate danger; lack of staff, lack of effective appraisal and processing, and limited capacity to follow disaster procedures all place a key regional resource at risk.<sup>350</sup> It's well known what disaster

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343Jaffer Kabir Najar and Zahid Ashraf Wani, “A Study of Disaster Preparedness of Archives & Museum in Seismic Zone - v, Flood Prone and Conflict Ridden Kashmir,” *Collection and Curation* 40, no. 2 (April 2021): 33–41, <https://doi.org/10.1108/CC-02-2020-0003>.

344Najar and Wani, “A Study of Disaster,” 40.

345Ngulube et al., “Disaster Preparedness”; Adrienne Muir and Sarah Shenton, “If the Worst Happens: The Use and Effectiveness of Disaster Plans in Libraries and Archives,” *Library Management* 23, no. 3 (May 2002): 115–23, <https://doi.org/10.1108/01435120210697216>; Diane B. Lunde and Patricia A. Smith, “Disaster and Security: Colorado State Style,” *Library & Archival Security* 22, no. 2 (2009): 99–114, <https://doi.org/10.1080/01960070902869766>.

346Muir and Shenton, “If the Worst Happens.”

347Gilles Langelier and Sandra Wright, “Contingency Planning for Cartographic Archives,” *Archivaria* 13: Cartographic Archives (Winter 1981/82): 47–58.

348Lunde and Smith, “Disaster and Security.”

349Centeno, “Episode 25.”

350Nkholezeni Sidney Netshakhuma, “The Impact of Climate Change on the Mpumalanga Provincial Archives and Records Management Activities,” *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 269–83, <https://doi.org/10.1108/RMJ-09-2020-0031>.

planning entails, but the literature shows that archives and archival workers continue not to do it or do it well, and extreme resource limitations are often to blame.

#### 3.4.4. Determining environmental impact

Shifting from impacts *on* archives to the impacts *of* archives, those who evaluate archives' environmental impact focus their attention on buildings, archival workflows, and supply chains. A few note that the field's carbon footprint also includes conference travel, while Staniunas goes further: “The whole material conditions of archives contribute to climate change.”<sup>351</sup> One archive's on-site carbon footprint results from using and storing paper, digitizing, storing digital records, and operating storage facilities, for example, while also depending on sources of energy.<sup>352</sup> Faulkner et al. find that archives' and museums' environmental sustainability policies most often focus on electricity, facilities, and water use, less so on practices like exhibits and collection management.<sup>353</sup> Durham observes that there are “no records of the use of the concept of environmental sustainability in the digital strategic plans of any major governmental cultural heritage organization, including the Smithsonian Institution and the Library of Congress.”<sup>354</sup>

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351 Staniunas says: “Theoretically as professionals, unlike laborers, or so goes the concept, we have the responsibility to manage the conditions of our work and make determinations about what that work will look like. It would be annoying and reductive to take the necessity of responding to climate change in archives and boil it down to 'archives workers need control of the work environment' like one big union is going to keep us short of plus 1.5 degrees Celsius over the pre-industrial mean or whatever. But what I'm saying is the whole material conditions of archives contribute to climate change. Every unavoidable car commute, every site visit, every UPS shipment, every plane ticket to a conference contributes. And careful stewardship of those carbon costs should be part of professional practice.” Tansey and Goldman highlight conference travel in particular as a climate impact. David Staniunas, “Adaptive HVAC Use: The Case of the Presbyterian Historical Society” (ARCHIVES \* RECORDS 2023: Joint Annual Meeting of the Council of State Archivists and the Society of American Archivists, Washington, DC, 2023); Tansey and Goldman, “Archivists Against the Climate Crisis”; Eira Tansey, “We’ve Got to Stop Meeting Like This: A Proposal for HACS (Hybrid Archives Conference Strategy),” *Project\_arcc* (blog), August 2, 2021, <https://projectarcc.org/2021/08/02/weve-got-to-stop-meeting-like-this-a-proposal-for-hacs-hybrid-archives-conference-strategy/>.

352 David Staniunas, “Our Carbon Footprint in the Archives,” *Presbyterian Historical Society* (blog), September 9, 2019, <https://www.history.pcusa.org/blog/2019/09/our-carbon-footprint-archives>.

353 James Faulkner, Liuxing Lu, and Jiangping Chen, “Archivists’ Golden Egg: Environmental Sustainability Practices of Archives,” *The Electronic Library* 39, no. 2 (2021): 258–80, <https://doi.org/10.1108/EL-09-2020-0260>.

354 Curtis J. Durham, “The Necessity of Environmentally Sustainable Digital Preservation and Its Effects on

Several large national archives and libraries have studied how to reduce their buildings' energy use while continuing to provide appropriate environmental conditions for collections.<sup>355</sup> Findings indicate promising methods like fewer air exchanges and partial shut-downs of heating, ventilation, and air conditioning (HVAC). Repeat experiments and analyses can help optimize energy use, as guidance from the Image Permanence Institute (IPI) recommends.<sup>356</sup> Kilbride opines that working within building codes means that managers of physical collections better understand environmental impacts, relative to digital repository managers whose systems aren't subject to the same degree of regulation.<sup>357</sup> But in-house information technology accounts for a large percentage of energy use in some archives, as Requeijo and Arnold find.<sup>358</sup> Workflow evaluations focus on reducing the quantity of records that enter and remain in facilities, as well as the energy-intensive tasks required to maintain them.<sup>359</sup> Assessing the environmental impacts

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Preservation Workflow,” December 2019, JScholarship, 23.

- 355 Nancy Bell, “Leaders of Change: Strategies for Meeting the Environmental Challenge” (25th Annual National Archives Preservation Conference: Conservation<sup>2</sup> = Preserving Collections x Our Environment, Hyattsville, MD, 2011), <https://www.archives.gov/preservation/conferences/2011/presentations/bell.pdf>; Mark Sprouse, “Moving Towards Sustainable Operations” (25th Annual National Archives Preservation Conference: Conservation<sup>2</sup> = Preserving Collections x Our Environment, Hyattsville, MD, 2011), <https://www.archives.gov/preservation/conferences/2011/presentations/sprouse.pdf>; Sung H. Hong et al., “Climate Change Mitigation Strategies for Mechanically Controlled Repositories: The Case of the National Archives, Kew,” *Atmospheric Environment* 49 (March 2012): 163–70, <https://doi.org/10.1016/j.atmosenv.2011.12.003>; Nancy Lev-Alexander, “Energy Savings Trial in the Library of Congress John Adams Building Stacks,” *Collections: A Journal for Museum and Archives Professionals* 8, no. 4 (Fall 2012): 365–76;
- 356 “IPI’s Methodology for Implementing Sustainable Energy-Saving Strategies in Collections Environments” (Rochester, NY: Image Permanence Institute, 2017), [https://s3.cad.rit.edu/ipi-assets/publications/methodology\\_guidebook/methodology\\_guidebook\\_all.pdf](https://s3.cad.rit.edu/ipi-assets/publications/methodology_guidebook/methodology_guidebook_all.pdf).
- 357 William Kilbride, “Here Comes the Tide,” *Digital Preservation Coalition* (blog), November 2010, <https://www.dpconline.org/blog/whats-new-issue-31-november-2010#Editorial31>.
- 358 Brigitte Requeijo and Hillel Arnold, “One Step at a Time: Shrinking Our Carbon Footprint” (Society of American Archivists Research Forum, Virtual Conference, 2023).
- 359 Mark Wolfe, “Beyond ‘Green Buildings’: Exploring the Effects of Jevons’ Paradox on the Sustainability of Archival Practices,” *Archival Science* 12, no. 1 (March 2012): 35–50, <https://doi.org/10.1007/s10502-011-9143-4>; Alex Kinnaman and Alan Munshower, “Green Goes with Anything: Decreasing Environmental Impact of Digital Libraries at Virginia Tech,” in *Proceedings of the 18th International Conference on Digital Preservation 2022* (iPres 2022 Glasgow 18th International Conference on Digital Preservation, Glasgow, Scotland: Digital Preservation Coalition, 2022), 89–98, <https://doi.org/10.7207/ipres2022-proceedings>; Anne Baillot, *From Handwriting to Footprinting: Text and Heritage in the Age of Climate Crisis* (Cambridge, UK: Open Book Publishers, 2023), <https://doi.org/10.11647/OBP.0355>.

of digital archives should consider data centers and their energy sources, the energy use of tape drives and facilities, electronic waste (e-waste) and pollutants, and how work practices affect all of the above.<sup>360</sup> But even calculating the power consumption of an ordinary activity like fixity checking is time-intensive, as Blood observes.<sup>361</sup> Paschalidou suggests that concepts like “sufficiency” and “loss acceptance” may form the basis for more environmentally sustainable practices.<sup>362</sup> However, one blogger concludes that climate shifts poses a greater threat to digital preservation, than digital preservation poses to the climate.<sup>363</sup>

As the research presents it, making change through supply chains often means different consumer choices. For instance, Starratt describes how one archives created a purchasing plan to meet its parent organization's sustainability goals.<sup>364</sup> Kain recommends that organizations assess themselves against benchmarks for recycling, materials sourcing, storage, and overall effectiveness of records practices.<sup>365</sup> Opinions differ as to whether cloud storage at scale is more

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360Ray Edmondson, “Raising Awareness on Climate Change” (AMIA 2016: 26th Annual Conference of the Association of Moving Image Archivists, Pittsburgh, PA, 2016); Julie McIntyre, “Blank Pages, Brief Notes and Ethical Double-Binds: Micro Digitisation and the ‘Infinite Archive,’” *Archives and Manuscripts* 44, no. 1 (2016): 2–13, <https://doi.org/10.1080/01576895.2015.1136224>; Linda Tadic, “On Earth Day 2016, There Is More to Be Done,” *Project\_arcc* (blog), April 22, 2016, <https://projectarcc.org/2016/04/22/on-earth-day-2016-there-is-more-to-be-done/>; Benjamin Goldman, Abbie La Porta, and Hudson Avery Wagner, “Penn State University Libraries Greenhouse Gas Inventory” (State College, PA: Penn State University Libraries, August 2021), ScholarSphere, <https://doi.org/10.26207/bp4g-3p45>; Kieran Hagerty, “Representing Biases, Inequalities and Silences in National Web Archives: Social, Material and Technical Dimensions,” *Archives and Manuscripts* 50, no. 1 (2022): 31–45, <https://doi.org/10.37683/asa.v50.10209>; Karin Hodgkin Jones et al., “The Curricular Asset Warehouse at the University of Illinois: A Digital Archive’s Sustainability Case Study,” in *19th International Conference on Digital Preservation 2023* (iPRES 2023, Champaign-Urbana, IL, 2023), 318–19; Mikko Tiainen et al., “Calculating the Carbon Footprint of Digital Preservation,” in *19th International Conference on Digital Preservation 2023* (iPRES 2023, Champaign-Urbana, IL, 2023), 163–68.

361George Blood, “Fixating on Fixity: Is Your Choice of Checksum in Conflict with Your Climate Goals?” (Society of American Archivists Research Forum, Virtual Conference, 2022).

362Evangelia Paschalidou, “Environmental Sustainability in Digital Preservation of Cultural Heritage: Advancing a Sufficiency Approach for Cultural Heritage Organisations; A Case Study of the Finnish Heritage Agency” (Master of Science, Lund, Sweden, Lund University, 2021), <http://lup.lub.lu.se/student-papers/record/9062811>.

363Matthew Addis, “What Is the Carbon Footprint of Large-Scale Global Digital Preservation?,” *Digital Preservation Coalition* (blog), October 23, 2023, <https://www.dpconline.org/blog/blog-matthew-addis-ipres23>.

364Laura Starratt, “Sustainability Initiatives at Emory University” (ARCHIVES \* RECORDS 2023: Joint Annual Meeting of the Council of State Archivists and the Society of American Archivists, Washington, DC, 2023).

365John Kain, “Tips for Growing a Green Organization,” *Information Management Journal* 44, no. 3 (2009): 16–19.

or less sustainable than local, community-based networks.<sup>366</sup> Sourcing for sustainability is also an opportunity to seek out businesses in communities with greater employment instability.<sup>367</sup> Due diligence in digital archives should account for energy regulation and sources, environmental practices of cloud and off-site storage vendors, materials used in equipment and storage, electronic waste disposal, and acceptable levels of duplication.<sup>368</sup> For instance, Lischer-Katz writes that the ecological impacts of digitizing analog video include energy for data centers, unplayable media disposal, rare metals mining and production, and waste water.<sup>369</sup> Numerous participants in Morrone's oral history of library and archives technology each make the point that labor and environment are closely related when considered in terms of space: where e-waste goes, the “hidden costs” of digital content, “whose physical spaces are impacted by the presence” of data centers, and what goes on beyond digital interfaces that are anything but immaterial.<sup>370</sup> Hahn analyzes cloud computing's “deep ties to oil and gas extraction in addition to a profound physical and resource-heavy footprint” and urges “scaling back our technological investments” not only in terms of environmental impact but also of human rights.<sup>371</sup>

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366Megan Finn et al., “Troubled Worlds: A Course Syllabus about Information Work and the Anthropocene,” *Journal of Critical Library and Information Studies* 3, no. 1: Libraries and Archives in the Anthropocene (2020), <https://doi.org/10.24242/jclis.v3i1.137>; Matthew Addis, “Is Digital Preservation Bad for the Environment?,” *Digital Preservation Coalition* (blog), November 22, 2021, <https://www.dpconline.org/blog/is-digital-preservation-bad-for-the-environment>.

367*Considering Consumption*, 2022, <https://www.youtube.com/watch?v=UTW2SMvSjkk>.

368Durham, “Necessity of Environmentally Sustainable”; Bethany Scott and Diana Dulek, “Waste Not, Want Not: Assessing the Environmental Sustainability of the University of Houston’s Digital Preservation Program,” in *Proc. IS&T Archiving 2020* (Archiving 2020, Society for Imaging Science and Technology, 2020), art00011, <https://doi.org/10.2352/issn.2168-3204.2020.1.0.49>; Linda Tadic, “The Environmental Impact of Digital Preservation,” [https://static1.squarespace.com/static/56844dac0ab37742d396c9a6/t/647fd7ce2692a809ef3390f3/1686099922254/Environmental\\_Impact\\_of\\_Digital\\_Preservation\\_Tadic\\_short\\_20230502.pdf](https://static1.squarespace.com/static/56844dac0ab37742d396c9a6/t/647fd7ce2692a809ef3390f3/1686099922254/Environmental_Impact_of_Digital_Preservation_Tadic_short_20230502.pdf).

369Zack Lischer-Katz, “Studying the Materiality of Media Archives in the Age of Digitization: Forensics, Infrastructures and Ecologies,” *First Monday* 22, no. 1 (2017), <https://doi.org/10.5210/fm.v22i1.7263>.

370Melissa Morrone, ed., *Human Operators: A Critical Oral History on Technology in Libraries and Archives* (Sacramento, CA: Library Juice Press, 2018), 314, 311, 350.

371Ariel Hahn, “Refusing Growth: Cloud Technology, Climate Change, and the Future of Libraries and Archives,” in *Land in Libraries: Toward a Materialist Conception of Education*, ed. Lydia Zvyagintseva and Mary Greenshields (Sacramento, CA: Library Juice Press, 2023), 167, 168.

### 3.4.5. Setting measurements and standards

Alongside each of these evaluations, contributors call for better measurement: “We need better methods for repeatable measurement of small change.”<sup>372</sup> Several argue that archivists need observable measures or proxy data to understand how archival storage and external environments interact. Regular environmental assessments, collection mapping, sensors, and data loggers can reveal “microclimates” within buildings, as Ntanos and VanSnick demonstrate.<sup>373</sup> One claim in the literature is that quantitative data are more actionable than intuitive local knowledge.<sup>374</sup> Without better measurement, another line of argument goes, archivists will be unable to demonstrate that their work deserves funding, and can't make the changes they want.<sup>375</sup> For instance, Weber proposes that an index that measures atmospheric data usage could provide a proxy for “curation impact” of a repository.<sup>376</sup> It's generally difficult to measure the impacts of archives projects, for example within short grant cycles, but archivists continue to try.<sup>377</sup> Measuring the right things can align archives and records programs with organizational

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372Michael C. Henry, “The Conservation<sup>2</sup> Building = Efficiency x Longevity: Non-Mechanical Strategies for Energy-Efficient Collections Environments” (25th Annual National Archives Preservation Conference: Conservation<sup>2</sup> = Preserving Collections x Our Environment, Hyattsville, MD, 2011), <https://www.archives.gov/preservation/conferences/2011/presentations/henry.pdf>.

373Kostas Ntanos and Sarah VanSnick, “Understanding the Environment in an Archive Store,” *International Preservation News*, December 2011, 15.

374Gregor Trinkaus-Randall, James Reilly, and Patricia Ford, “The Massachusetts Experiment: The Role of the Environment in Collection Preservation,” *The American Archivist* 77, no. 1 (Spring/Summer 2014): 133–50, <https://doi.org/10.17723/aarc.77.1.kk006ng47132715j>; Bethany Scott, “Estimating Energy Use for Digital Preservation, Part I,” *BloggERS!* (blog), October 6, 2020, <https://saaers.wordpress.com/2020/10/06/estimating-energy-use-for-digital-preservation-part-i/>.

375Trinkaus-Randall et al., “Massachusetts Experiment”; Welch, “‘Green’ Archivism”; Laura Alagna et al., “Archivists on the Issues: Creating Environmentally Sustainable Digital Preservation: A Workshop,” *Issues & Advocacy* (blog), April 2, 2020, <https://issuesandadvocacy.wordpress.com/2020/04/02/archivists-on-the-issues-creating-environmentally-sustainable-digital-preservation-a-workshop/>.

376Nicholas M. Weber et al., “The Product and System Specificities of Measuring Curation Impact,” *International Journal of Digital Curation* 8, no. 2 (November 2013): 223–34, <https://doi.org/10.2218/ijdc.v8i2.286>.

377Melanie Wisner, “Uncovering California’s Environmental Collections: A Collaborative Approach (CLIR UCEC),” 2011, <https://clir.org/wp-content/uploads/sites/14/UCECfinalRev.pdf>; Ricardo L. Punzalan, Diana E. Marsh, and Kyla Cools, “Beyond Clicks, Likes, and Downloads: Identifying Meaningful Impacts for Digitized Ethnographic Archives,” *Archivaria* 84 (Fall 2017): 61–102.

sustainability goals, which in turn can make it possible to implement changes.<sup>378</sup> However, Sampson argues that it's no longer possible to have a “reasonably accurate measure of environmental impact for a given operation” because of the politics involved in determining appropriate measurements and how to act upon them.<sup>379</sup>

Standards and their uses emerge from contingencies. For example, Templer says, many parties have to agree upon the methods for protecting computers and records in a disaster.<sup>380</sup> Interest convergence plays a role, as in a Canadian example of conservators and a growing forestry industry collaborating on a standard for permanent paper.<sup>381</sup> As Inch describes, the conservators' focus on Canada's winter climate shapes research, techniques, guidelines, and tools that they circulate to cultural heritage workers in Iraq, Haiti, and elsewhere through international collaborations and working groups. Alternatively, standards and theories of preservation should incorporate cultural practices, technical capacities, and traditional, non-industrial methods that are local to where people put the standards and theories into use. This includes crediting community members who contribute their expertise from outside the archives field.<sup>382</sup>

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378Lois M. Evans, “Sometimes, Green Is the Outcome: Climate Action in Records Management and Archives in Canada,” *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 240–68, <https://doi.org/10.1108/RMJ-12-2020-0041>; Henry McGhie, “Mainstreaming the Sustainable Development Goals: A Results Framework for Galleries, Libraries, Archives and Museums” (Curating Tomorrow, 2021), [http://www.curatingtomorrow.co.uk/wp-content/uploads/2022/03/mainstreaming-the-SDGs\\_2021.pdf](http://www.curatingtomorrow.co.uk/wp-content/uploads/2022/03/mainstreaming-the-SDGs_2021.pdf); Henry McGhie, “Action for Climate Empowerment: A Guide for Galleries, Libraries, Archives and Museums” (Curating Tomorrow, 2022), [http://www.curatingtomorrow.co.uk/wp-content/uploads/2022/04/action-for-climate-empowerment\\_2022.pdf](http://www.curatingtomorrow.co.uk/wp-content/uploads/2022/04/action-for-climate-empowerment_2022.pdf).

379Walker Sampson, “Thoughts on Environmental Sustainability in Archives,” *Walker Sampson* (blog), January 11, 2022, <https://wsampson.blog/2022/01/11/thoughts-on-environmental-sustainability-in-archives/>.

380Julian Templer, “System for Protecting Records,” in *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, ed. Hyacinth Brown (Kingston, Jamaica: Jamaica Library Association, 1989), 11–13.

381Jeanne E. Inch, “Canadian Conservation Institute: Serving Our Clients . . . Preserving Canada’s Heritage,” *Collections: A Journal for Museum and Archives Professionals* 9, no. 3 (Summer 2013): 283–98.

382Michael Hoyle and Laura Millar, “Archival Education in the Pacific: The Challenges of Trying to Establish a Distance Education Archives and Records Course in the Pacific Islands,” *Comma* 2005, no. 2 (January 2005): 1–16, <https://doi.org/10.3828/coma.2005.2.4>; Patricia Engel, “Applicability of Traditional Storage Methods in Indonesia for Today’s Conservation Practice,” *IFLA Journal* 48, no. 2: Special Issue: Preservation storage and curation strategies (June 2022): 339–48, <https://doi.org/10.1177/03400352211023077>.

### 3.5. Designing systems: towards sustainable buildings and digital preservation

Climate change motivates designers of technical systems to reduce energy use in buildings and digital preservation systems. Managing costs is just one of the reasons to do so.<sup>383</sup>

#### 3.5.1. Designing environmentally sustainable archives buildings

Some preservation strategies focus on meticulously separating inside and outside environments, for example when climate and weather would damage collection materials or make it hard to spend time outdoors.<sup>384</sup> In a mostly airtight building with low air exchange rate, Padfield and Larsen write, “we can regard the archival materials as buffering against change in their environment.”<sup>385</sup> According to IPI guidance, this allows modest use of HVAC, saving energy.<sup>386</sup> However, researchers just as often recommend managing storage environments passively. Hioki describes one traditional example of managing storage environments without HVAC that combines “low-tech” choices like materials and window/door placement, with “labor-intensive” practices like opening and closing windows on a daily schedule and annually airing out each storage box.<sup>387</sup> Maekawa notes that conventional HVAC approaches – cooling,

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383Meyer et al., “Sustainability: A Review”; Cornelius J. Rusnov, “Pennsylvania’s Rare Collections Library Design Overview (Non-Technical),” ed. Melissa Tedone (From Gray Areas to Green Areas: Developing Sustainable Practices in Preservation Environments, Austin, TX, 2007), <https://web.archive.org/web/20101102012143/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings2008/GAGA07-rusnov.pdf>.

384Pierre-P. Grassé, “Protection of Archival Documents Against the Effects of Tropical Climates,” in *A Manual of Tropical Archivology*, ed. Yves Pérotin, trans. Keith Booth (Paris: Mouton & Co., 1966), 109–20; M. W. Pascoe, “Impact of Environmental Pollution on the Preservation of Archives and Records: A RAMP Study” (Paris: United Nations, Educational, Scientific, and Cultural Organization, 1988); S. E. Ezennia, “The Harmattan and Library Resources Management in Nigeria: An Appraisal of the Effects, Problems and Prospect,” *Library & Archival Security* 9, no. 2 (1989): 43–48, [https://doi.org/10.1300/J114v09n02\\_04](https://doi.org/10.1300/J114v09n02_04); Steve E. Ezennia and Emma O. Onwuka, “The Battle for Preservation of Library Materials in Nigeria,” *Library & Archival Security* 13, no. 1 (1995): 29–39, [https://doi.org/10.1300/J114v13n01\\_04](https://doi.org/10.1300/J114v13n01_04).

385Tim Padfield and Poul Klensz Larsen, “Low Energy Air-Conditioning of Archives,” *Journal of the Society of Archivists* 27, no. 2 (February 2007): 214, 216.

386“IPI’s Guide to Sustainable Preservation Practices for Managing Storage Environments” (Rochester, NY: Image Permanence Institute, July 2012), [https://s3.cad.rit.edu/ipi-assets/publications/sustainable\\_preservation\\_practices/sustainable\\_preservation\\_practices\\_all.pdf](https://s3.cad.rit.edu/ipi-assets/publications/sustainable_preservation_practices/sustainable_preservation_practices_all.pdf).

387Kazuko Hioki, “From Japanese Tradition: Is Kura a Model for a Sustainable Preservation Environment?,” ed.

dehumidification, reheating – don't work well for buildings that pre-date air conditioning.<sup>388</sup> A better approach is to improve the building envelope, manage space occupancy, and control humidity mechanically. Legacy colonial archival buildings are actually damaging records through their maladaptation to local environments.<sup>389</sup> Adapting archival standards to local, climate-appropriate architectural styles is more effective, whether retrofitting or building new.<sup>390</sup> What it takes to build in different climates is already well known, Gwam writes; purpose-built archival facilities serve an additional symbolic purpose of establishing the legitimacy of archives programs.<sup>391</sup> Ultimately, according to Flieder, building site offers the greatest protection against climate effects.<sup>392</sup> To Newnham, the repository design process should begin with understanding the local environment, then designing inward from those conditions.<sup>393</sup> Knowing what data and supplies are easy to obtain should be part of this preparation. A report from the Asociación Latinoamericana de Archivos advises that knowing how materials behave under environmental conditions is essential – as in any architectural project.<sup>394</sup>

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Melissa Tedone (From Gray Areas to Green Areas: Developing Sustainable Practices in Preservation Environments, Austin, TX, 2007), 11.

388Shin Maekawa, “Case Studies of Alternative Climate Management for Hot-Humid and Marine Climates” (25th Annual National Archives Preservation Conference: Conservation<sup>2</sup> = Preserving Collections x Our Environment, Hyattsville, MD, 2011), <https://www.archives.gov/preservation/conferences/2011/presentations/maekawa.pdf>.

389Sandra Rowoldt, “Going Archival Green: Implications of Doing It Naturally in Southern African Archives and Libraries,” *South African Journal of Libraries and Information Science* 66, no. 4 (1998): 141–47, <https://doi.org/10.7553/66-4-1425>; Anne Lebel and Véronique Bigeard, “Construction of an Archive Building in a Tropical Climate: The Saint Martin Media Library and Territorial Archives,” *International Preservation News*, December 2011.

390Rowoldt, “Going Archival Green”; May Cassar, “Energy Reduction and the Conservation of Cultural Heritage: A Review of Past, Present and Forthcoming Initiatives,” *International Preservation News*, December 2011.

391Lloyd C. Gwam, “The Construction of Archive Buildings in Tropical Countries,” in *A Manual of Tropical Archivology*, ed. Yves Pérotin (Paris: Mouton & Co., 1966), 77–92.

392Françoise Flieder, “Protection of Archival Documents Against the Effects of Tropical Climates,” in *A Manual of Tropical Archivology*, ed. Yves Pérotin, trans. Keith Booth (Paris: Mouton & Co., 1966), 93–108.

393Mick Newnham, “Adapt/Survive: Outside the Box Energy & Conservation Policies, Practices and Methods” (AMIA 2016: 26th Annual Conference of the Association of Moving Image Archivists, Pittsburgh, PA, 2016).

394Asociación Latinoamericana de Archivos, “Archive Buildings in a Tropical Climate and with Low Resources,” ICA Study 17 (Paris: International Council on Archives, 2005), <https://www.ica.org/en/ica-study-n%C2%B017-archive-buildings-tropical-climate-and-low-resources>.

Guidelines for sustainable archives buildings, spaces, and practices must cover a wide range of contingencies. For instance, Daniel advises that different guidelines are necessary for repositories with and without air conditioning.<sup>395</sup> Flexible standards are a popular way to reduce buildings' energy use since, as Belaïsch observes, strict climate control requires costlier maintenance and presents more technical problems.<sup>396</sup> Zhang and Wang's research at archival building sites in three regions of China shows that it's possible to design a building standard flexible enough for a vast geographic area, diverse climate conditions, and variable distribution and density of government buildings.<sup>397</sup> Alternatively, with flexible building programs, minimal outside air exchanges, and tiers of environmental control, it's possible to meet multiple sets of standards at once.<sup>398</sup> User-centered design processes can result in spaces that are easier to use and also possible to manage more sustainably, as Afacan documents.<sup>399</sup> Another design response is to substitute or reuse supplies for archives buildings and preservation workflows, in order to minimize environmental damage and in the absence of reliable recycling options.<sup>400</sup> Blake and

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395Vinod Daniel, "Building Management and Maintenance in the New Millennium," *Library Review* 50, no. 7/8 (2001): 407–16.

396France Saïe Belaïsch, "Sustainable Development and Archives Buildings in France," *International Preservation News*, December 2011.

397Meifang Zhang and Yushi Wang, "Energy Efficiency Approaches in Archives and Library Buildings in China," *Archival Science* 15 (2015): 71–81, <https://doi.org/10.1007/s10502-013-9214-9>.

398Michael C. Henry, "What Will the Cultural Record Say about Us? Stewardship of Culture and the Mandate for Environmental Sustainability," ed. Melissa Tedone (From Gray Areas to Green Areas: Developing Sustainable Practices in Preservation Environments, Austin, TX, 2007),

<https://web.archive.org/web/20100620112941/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings2008/G>

[AGA07-henry.pdf](#); James Reilly, "Specifying Storage Environments in Libraries and Archives," ed. Melissa Tedone (From Gray Areas to Green Areas: Developing Sustainable Practices in Preservation Environments, Austin, TX, 2007),

<https://web.archive.org/web/20101102012143/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings2008/G>

[AGA07-reilly.pdf](#); France Saïe Belaïsch, "Green Archives Buildings: Archive Buildings and Sustainable

Development," *Comma* 2 (2008): 133–38, <https://doi.org/10.3828/comma.2008.2.15>; Martin Turpin,

"Sustainable Design Approach to Preservation Centers," *International Preservation News*, December 2011;

Reinhard Altenhöner and Jakob Nadal, "Tāhuhu: Preserving the Nation's Memory Programme: An Interview with Peter Whitehead and Hinerangi Himiona," *IFLA Journal* 48, no. 2: Special Issue: Preservation storage and curation strategies (June 2022): 267–74, <https://doi.org/10.1177/03400352221093476>.

399Yasemin Afacan, "Sustainable Library Buildings: Green Design Needs and Interior Architecture Students' Ideas for Special Collection Rooms," *Journal of Academic Librarianship* 43, no. 5 (September 2017): 375–83,

<https://doi.org/10.1016/j.acalib.2017.07.002>.

400Nicholas Artim, "Cultural Heritage Fire Suppression Systems: Alternatives to Halon 1301," *Western Association*

Relle demonstrate that improving building efficiency can be a matter of using systems differently – with shutdowns, seasonal set points, and adjusting fan speed and outside air – or by upgrading to more efficient and automated building systems.<sup>401</sup> As Egbert shows, however, even testing different set points can be out of reach for archives if their HVAC systems don't support the adjustments, and replacement is financially out of reach.<sup>402</sup> Finally, archives' choice of power sources can reduce environmental impacts.<sup>403</sup>

### 3.5.2. Sustainability parameters for digital preservation

Environmental challenges can also be design parameters for digital preservation systems. Power consumption is a consideration, but not the only one.<sup>404</sup> For example, digital preservation for radioactive waste repositories must operate on very long timescales, enable decision-making into the far future, follow legally mandated records retention, and remain usable for people whose future needs can only be speculated.<sup>405</sup> A widely used model for assessing digital

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*for Art Conservation Newsletter* 15, no. 2 (May 1993): 34–36; Chris Woods, “Meeting the Montreal Protocol: Alternative Fire Suppression Systems for Archives,” *Journal of the Society of Archivists* 23, no. 2 (2002): 179–86, <https://doi.org/10.1080/0037981022000006363>; Ashley Jones, “Sustainability in Library Preservation,” *Technical Services Quarterly* 31, no. 1 (November 2013): 31–43, <https://doi.org/10.1080/07317131.2014.844631>; Janice Chen, “A Greener Film Archive,” *Digital Preservation Coalition* (blog), November 22, 2021, <https://www.dpconline.org/blog/wdpd/a-greener-film-archive>.

401 Blake Relle and Danielle Cordovez, “Dramatically Reducing An Archive’s Carbon Footprint by Working with the City,” *Project\_arcc* (blog), January 11, 2016, <https://projectarcc.org/2016/01/11/dramatically-reducing-an-archives-carbon-footprint-by-working-with-the-city/>; Ben Goldman, “Archival Emissions: Calculating the Environmental Impact of Collections Storage” (Society of American Archivists Research Forum, Virtual Conference, 2022).

402 As Egbert finds, HVAC units that control humidity by cooling, rather than dehumidifying, can't be adjusted to maintain relative humidity of a storage space at a higher temperature. So using less energy on cooling is not an option. Helena Egbert, “Frustrating But Hopefully Not Futile: Lessons in HVAC Systems and Implementing Change” (ARCHIVES \* RECORDS 2023: Joint Annual Meeting of the Council of State Archivists and the Society of American Archivists, Washington, DC, 2023).

403 Caroline Yeager, “Acknowledge, Adapt, and Survive: Environmental Issues and Archives” (AMIA 2016: 26th Annual Conference of the Association of Moving Image Archivists, Pittsburgh, PA, 2016).

404 Discussions of digital preservation, climate change, and environment have progressed since a 2010 talk argued that power consumption was the only measure worth addressing to reduce environmental impact. Neil Grindley et al., “How Green Is Digital Preservation?” (7th International Conference on Preservation of Digital Objects (iPRES 2010), Vienna, Austria, 2010), <https://www.ifs.tuwien.ac.at/dp/ipres2010/img/GrindleyGreenPreservationPanel.pdf>.

405 Jean-Noël Dumont et al., “Analysis of the Needs for Long Term Memory and Knowledge Preservation Relating to Radioactive Waste Disposal Facilities” (WM2017 Conference, Phoenix, AZ, 2017),

preservation programs encodes several of these assumptions.<sup>406</sup> Industrial practices can conflict with common digital preservation needs. For example, Rosenthal observes that low-carbon data centers operate to minimize servers, which isn't a good fit for preservation storage that “needs lower power and fast access.”<sup>407</sup> Planned obsolescence and short-term thinking mean that organizations rarely “keep disks for their working life.”<sup>408</sup> However, Tadic suggests that changes in information and communication technologies (ICT) manufacturing may in turn reduce environmental impacts of preservation activities like digitization and storing digital files.<sup>409</sup> Storage vendors have begun to discuss shifts in the environment when promoting their products to digital preservationists.<sup>410</sup> To reduce climate impacts, archivists have experimented with infrastructure like virtual machines, server sharing, and a serverless computing stack, and speculated whether technologies like microfilm or smart paint could help.<sup>411</sup> Others propose ways

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[https://archivedproceedings.econference.io/wmsym/2017/pdfs/FinalPaper\\_17213\\_0327022036.pdf](https://archivedproceedings.econference.io/wmsym/2017/pdfs/FinalPaper_17213_0327022036.pdf); Nuclear Energy Agency, “Preservation of Records, Knowledge and Memory (RK&M) Across Generations: Compiling a Set of Essential Records for a Radioactive Waste Repository” (Organisation for Economic Co-operation and Development, 2019), [https://www.oecd-nea.org/jcms/pl\\_15090](https://www.oecd-nea.org/jcms/pl_15090); Vincent Joguín and Jean-Noël Dumont, “Passive Digital Preservation on Paper in Practice,” in *Proceedings of the 18th International Conference on Digital Preservation 2022* (iPres 2022 Glasgow 18th International Conference on Digital Preservation, Glasgow, Scotland: Digital Preservation Coalition, 2022), 271–76, <https://doi.org/10.7207/ipres2022-proceedings>.

406Michael Popham and Jean-Noël Mitcham, “From Ray Cats to DPC RAM: How Best to Preserve a Digital Memory of the Nuclear Decommissioning Process,” in *Proceedings of the 18th International Conference on Digital Preservation 2022* (iPres 2022 Glasgow 18th International Conference on Digital Preservation, Glasgow, Scotland: Digital Preservation Coalition, 2022), 315–18, <https://doi.org/10.7207/ipres2022-proceedings>.

407David S. H. Rosenthal, “Why Is Green Preservation Hard?” (Digital Preservation 2013, Alexandria, VA, 2013), <https://blog.dshr.org/2013/07/talk-at-digital-preservation-2013.html>.

408Rosenthal, “Why Is Green Preservation Hard?”

409Linda Tadic, “The Environmental Impact of Digital Preservation” (AMIA 2016: 26th Annual Conference of the Association of Moving Image Archivists, Pittsburgh, PA, 2016).

410Nicole Kang Ferraiolo and Jodi Reeves Eyre, “To Be Part of the Climate Solution, We Must Center Communities,” *CLIR* (blog), August 14, 2019, <https://www.clir.org/2019/08/to-be-part-of-the-climate-solution-we-must-center-communities/>; Veli-Antti Leinonen, “Breaking down Barriers with CSC Climate Negative / Zero Carbon Data Center,” *Digital Preservation Coalition* (blog), November 22, 2021, <https://www.dpconline.org/blog/wdpc/wdpc2021-leinonen>.

411Nathan Tallman, “A 21st Century Technical Infrastructure for Digital Preservation,” *Information Technology and Libraries* 40, no. 4 (December 2021), <https://doi.org/10.6017/ital.v40i4.13355>; Robert Gillesse et al., “The CO<sub>2</sub> Emissions of Storage and Use of Digital Objects and Data. Exploring Climate Actions,” in *Proceedings of the 18th International Conference on Digital Preservation 2022* (iPres 2022 Glasgow 18th International Conference on Digital Preservation, Glasgow, Scotland: Digital Preservation Coalition, 2022), 371–73, <https://doi.org/10.7207/ipres2022-proceedings>; Matthew Golebiewski, “Mitigating Catastrophic Risk from Climate Change Through Policy and Technology: What You Can Do Now” (Society of American Archivists Research Forum, Virtual Conference, 2022); Nathan Tallman and Hannah Wang, “Seeking Sustainability:

to adjust processes. Van Hoek suggests that emulating rather than migrating digital records could reduce environmental impacts, as could scheduling fixity checks during “off-peak seasons.”<sup>412</sup> Van Bussel et al. explain that, rather than implement new systems to reduce energy, a Dutch corporation reorganized its overseas subsidiaries around the goal of retaining less data.<sup>413</sup> One archives redesigned its digital object workflows to include more levels of appraisal and less frequent fixity checks, while another considers environmental impacts of digitization alongside “whether the digitisation project will highlight a lesser known or marginalised collection.”<sup>414</sup> Mitcham notes that flexible digital preservation standards “emphasize that not everyone should necessarily strive for the top level.”<sup>415</sup> Instead, as Vavassori et al. write, a good-enough practice is of more interest to many digital archives workers concerned about a transforming climate.<sup>416</sup>

### 3.6. Confronting archival politics: slow violence, advocacy, and activism

Archival workers concerned about climate and environment wrestle with archival politics in terms of archival harms and the purpose of archives, and through advocacy and activism.

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Developing a Modern Distributed Digital Preservation System,” in *Proceedings of the 18th International Conference on Digital Preservation 2022* (iPres 2022 Glasgow 18th International Conference on Digital Preservation, Glasgow, Scotland: Digital Preservation Coalition, 2022), 340–44, <https://doi.org/10.7207/ipres2022-proceedings>.

- 412 Sophia van Hoek, “Walking a Tightrope across the Gap of Digital Preservation and Environmental Sustainability: The National Archives of the Netherlands and the Challenge of Achieving a Climate-Neutral Digital Archive” (Amsterdam: Amsterdam University of the Arts, June 13, 2023), 18.
- 413 Geert-Jan van Bussel, Nikki Smit, and John van de Pas, “Digital Archiving, Green IT and Environment: Deleting Data to Manage Critical Effects of the Data Deluge,” *Electronic Journal of Information Systems Evaluation* 18, no. 2 (2015): 189.
- 414 Keith Pendergrass, “Embedding Sustainability into Systems and Tools: A Brief Case Study,” *Digital Preservation Coalition* (blog), November 10, 2021, <https://www.dpconline.org/blog/pendergrass-embedding-sustainability>; Elisabeth Thurlow, “It’s Not Easy Being Green: Evaluating the Impact of Digital Preservation,” *Digital Preservation Coalition* (blog), November 22, 2021, <https://www.dpconline.org/blog/wdpd/blog-elisabeth-thurlow-wdpd>.
- 415 Jenny Mitcham, “DPC RAM (Version 2) - What Has Changed and Why?,” *Digital Preservation Coalition* (blog), November 25, 2021, <https://www.dpconline.org/blog/dpc-ram-version-2-what-has-changed-and-why>.
- 416 Valentina Vavassori, Eirini Goudarouli, and Jane Winters, “Archives and the Environment Report” (OSF Preprints, September 19, 2023), <https://doi.org/10.31219/osf.io/pkbg5>.

### 3.6.1. Slow violence through archival harms

The literature shows how archivists and archival work both contribute to and benefit from slow violence. For example, U.S. colonial archives and other knowledge producers in the Philippines played flexible roles in response to the regime's changing needs, from waging war to redistributing land to opening natural resources for U.S. capital to exploit.<sup>417</sup> As Ghaddar demonstrates, early Canadian archivists prioritized preservation of manuscript collections that served white settler-colonial mythologizing about empty land and national identity, “facilitating the legal and administrative mechanisms that remove Indigenous nations from their land physically as well as their figurative disappearance from national consciousness and memory.”<sup>418</sup> Canadian archival literature misdirects attention from the Indigenous land on which archives stand, by not mentioning land at all.<sup>419</sup> In fact, Zapalac demonstrates how archivists celebrate local heritage projects for extending settler colonialism and global imperialism.<sup>420</sup> Archivists pay for digitization with oil and gas settlements, help pipeline financiers greenwash their images, and ingratiate themselves with hegemonic groups controlling access to natural resources.<sup>421</sup> One touts

417Cheryl Beredo, *Import of the Archive: U.S. Colonial Rule of the Philippines and the Making of American Archival History* (Sacramento, CA: Litwin Books, 2013); Brendan Luyt, “Reading the Minor Forest Products Bulletins of the Philippine Bureau of Forestry: A Case Study of the Role of Reference Works in the American Empire of the Early Twentieth Century,” *Information & Culture* 53, no. 1 (2018): 43–66, <https://doi.org/10.7560/IC53103>.

418J. J. Ghaddar, “*Total Archives* for Land, Law and Sovereignty in Settler Canada,” *Archival Science*, no. 21 (2021): 62.

419Ghaddar writes, “Once place is declared irrelevant because of globalization, commodified as property and resource, and abstracted as timeless decontextualized space, then the necessity of land reclamation that is at the core of decolonization is disappeared altogether. This tendency in the archival literature takes the form of conceptualizing the archives as a place or space while simultaneously abstracting its actual physical location to such an extent that the question of whose land the archives operates on rarely arises.” Ghaddar, “*Total Archives*,” 69.

420Laurie Zapalac, “From Institutional Mission to Sustainable Outcome: Cultivating Stewardship through the Planning and Design Process,” ed. Melissa Tedone (*From Gray Areas to Green Areas: Developing Sustainable Practices in Preservation Environments*, Austin, TX, 2007), <https://web.archive.org/web/20100620112941/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings2008/GAGA07-zapalac.pdf>.

421Richard Condrey, Faye Phillips, and Tony Presti, “Buffalo on the Beaches: Electronic Imaging of Historical Sources,” *Provenance, Journal of the Society of Georgia Archivists* 10, no. 1 (1992): 65–71; Marie Force, “Company History: Corporate Archives' Public Outreach on Fortune 100 Company Websites,” *Provenance, Journal of the Society of Georgia Archivists* 27, no. 1 (January 2009): 24–50; Patricia J. Rettig, “Tracing the

the ahistorical claims that cultural heritage began with the Enlightenment, and that National Parks are sites of “wild and untouched nature.”<sup>422</sup> Archivists also do harm in the name of climate awareness. For some, profit matters as much as environment in sustainability, and committing to sustainability can be as easy as listing it on a strategic plan.<sup>423</sup> Fearmongering about ecological impacts of migration, they ignore the effects of over-development and resource extraction.<sup>424</sup> Claiming association with environmental movements, they barely share resources with affected communities.<sup>425</sup> “Digital colonialism” through archives looks like historically colonized nations providing content for wealthy nations to digitize and store in climate-altering and fragile data centers.<sup>426</sup> It's not hard to feel shame and outrage at these archival harms but, as Ladino suggests, there may be “prospects for turning these so-called negative emotions into empathic political action in the present.”<sup>427</sup>

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Source of Irrigation: An Examination of Colorado Ditch Company Collections in Archival Repositories,” *Journal of Western Archives* 3, no. 1 (2012): Article 1.

422David Lowenthal, “Stewarding the Future,” *CRM Journal*, Summer 2005, 26.

423Abbey goes further by proposing a “quadruple bottom line” method of evaluating the sustainability of archival programs, accounting for people (“resource allocators,” “donors,” and “audience”), planet, profit, and program. An archival program that prioritizes profit and doesn't count workers as people perfectly embodies neoliberal thinking. Heidi N. Abbey, “The Green Archivist: A Primer for Adopting Affordable, Environmentally Sustainable, and Socially Responsible Archival Management Practices,” *Archival Issues* 34, no. 2 (2012): 91–115; Kevin Bradley, “Defining Digital Sustainability,” *Library Trends* 56, no. 1 (Summer 2007): 148–63, <https://doi.org/10.1353/lib.2007.0044>; Beth Filar Williams, “Integrating Sustainability into the Daily Work Practices: Lessons Learned as a Manager” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-s08-i005>.

424Whitaker and Sturgeon bemoan population growth in Arizona, citing “visible ecological impacts on a fragile desert” and lack of appreciation for history among newcomers, They marvel at the “contrasts and contradictions” of Arizona's landscapes (“urban and wilderness”), climate (“droughts and floods”) and demographics (“a Mecca for affluent retirees, yet one of the youngest states in the nation”) but don't seem to see the logics that produce these conditions. For example, parts of Arizona had to be *made hospitable* to wealthy transplants from other climates. Historical over-development and resource extraction altered soils and aquifers, for instance through compaction, while drought increases the potential for both floods and flood damage. Regarding youth and population growth, young immigrant or migrant workers – alone or with extended families – are likely drawn to areas where a growing number of service, health care, construction, and landscaping jobs support the needs of well-off seniors. Linda A. Whitaker and Melanie I. Sturgeon, “The Arizona Summit: Tough Times in a Tough Land,” *Journal of Western Archives* 1, no. 1: Inaugural Issue (2010): Article 3.

Some works in the corpus downplay the need for urgent, collective climate response. Only one disagrees that the volume of records could be connected to environmental issues.<sup>428</sup> More often, writers make climate action about individual affects and choices, or claim that practices are inherently, already “green.” For instance, some archivists recommend lifestyle changes like living closer to work to save gas, and purchasing different office products or home appliances.<sup>429</sup> Kaufman suggests that individual archival workers can contribute to climate adaptation by working through how it makes them feel.<sup>430</sup> As Williamson describes, one Scottish company tried to mitigate the environmental impact of its digital storage before pivoting to having employees “track their own impact on the environment” with an app.<sup>431</sup> Drake observes that the Society of

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425Helen Fallon, “Ringling the Ogoni Bells: The Ken Saro-Wiwa Archive,” *CILIP Update*, May 2016.

426So-called “safe havens” for “endangered archives” are far from risk-free thanks to complex technical infrastructures and uneven maintenance. For instance, an October 2023 cyber-attack on the British Library shut down many systems necessary for daily operations and digital collections delivery. The library's Endangered Archives Programme creates and concentrates digital copies of at-risk collections from around the world; as of March 2024, materials digitized through the program were still unavailable because of the depth and breadth of impacts. Jens Boel and David C. Sutton, “Archives at Risk: Addressing a Global Concern,” *Comma* 2017, no. 1 (November 2017): 111–19, <https://doi.org/10.3828/comma.2017.9>; Sam van Schaik, “Review of The Monumental Challenge of Preservation: The Past in a Volatile World,” *The American Archivist* 83, no. 1 (Spring/Summer 2020): 178–81, <https://doi.org/10.17723/0360-9081-83.1.178>; “Learning Lessons From the Cyber-Attack: British Library Cyber Incident Review” (London: British Library, March 8, 2024), <https://www.bl.uk/home/british-library-cyber-incident-review-8-march-2024.pdf>.

427Jennifer K. Ladino, “Mountains, Monuments, and Other Matter: Environmental Affects at Manzanar,” *Environmental Humanities* 6, no. 1 (May 2015): 154.

428Harvey writes, “In fact we could keep very many times as many historic records as we do now without running the smallest risk of creating an ecological problem.” P. D. A. Harvey, “Archives in Britain: Anarchy or Policy?,” *The American Archivist* 46, no. 1 (Winter 1983): 27.

429Recommendations like these, from Abbey, imagine a normative archival worker making a series of mutually independent decisions in a vacuum. However, local histories of housing politics, transportation, and labor practices shape where archival workers (can) live, affording more and different choices for some compared to others. For instance, Staniunas concretizes this issue by noting how high rent and low pay forces workers at one South Philadelphia archives to live outside the city and commute by car. Any cost or carbon savings achievable through HVAC adjustments at the archives would be small relative to the climate impact of ten car commutes. Gerber-Margie's list of actions is more explicit than Abbey's about the contingencies involved in acting as an individual. Abbey, “Green Archivist”; Staniunas, “Adaptive HVAC Use”; Dana Gerber-Margie, “A Green Archivist's Happy Home,” *Project\_arcc* (blog), September 4, 2015, <https://projectarcc.org/2015/09/04/a-green-archivists-happy-home/>.

430Casey Davis Kaufman, “Advocating for Climate Action: A Professional Responsibility and Moral Obligation” (AMIA 2016: 26th Annual Conference of the Association of Moving Image Archivists, Pittsburgh, PA, 2016).

431Karyn Williamson, “Adapting to ABRDN – Towards a Sustainable, Open Source Response to Digital Preservation,” *Digital Preservation Coalition* (blog), November 22, 2021, <https://www.dpconline.org/blog/adapting-to-abrdn>.

American Archivists (SAA) removed the phrase “environmental justice,” among others, from an event description, downplaying the urgency of both climate crisis and its unequal impacts.<sup>432</sup> Sloggett and Scott write that cultural heritage workers may be most comfortable addressing environmental shifts through terms like “adaptation” and “sustainability,” which can sidestep the topic of crisis.<sup>433</sup> Several archivists recommend promoting sustainability in cultural heritage organizations by identifying activities like lending materials and digital preservation as already sustainable, renewable, and environmentally friendly.<sup>434</sup> Some assert that archival work is already similar to climate action and sustainability work – preserving and preparing for future possibilities, resisting obsolescence, encouraging participation and inclusion, providing evidence for problem-solving – and therefore suited for it.<sup>435</sup> One writer insists that digital preservation is

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432Jarrett M. Drake, “Diversity’s Discontents: In Search of an Archive of the Oppressed,” *Archives and Manuscripts* 17, no. 2 (2019): 270–79, <https://doi.org/10.1080/01576895.2019.1570470>.

433Robyn Sloggett and Marcelle Scott, “Issues for Institutions: The Imperative for Heritage Organizations to Lead the Way,” in *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott (London: Routledge, 2023), 137–57, <https://doi.org/10.4324/9781003163312-9>.

434Marzia Loddo et al., “Empowering Collections-Based Organizations to Participate in Agenda 2030: The ‘Our Collections Matter Toolkit,’” *Sustainability* 13 (2021): 13964, <https://doi.org/10.3390/su132413964>; Lydia Hiraide, “Libraries and a Brighter Climate Future,” *Living Knowledge* (blog), November 3, 2021, <https://blogs.bl.uk/living-knowledge/2021/11/libraries-and-a-brighter-climate-future.html>; William Kilbride, “A Foot in the Door Is Worth Two on the Desk,” *Digital Preservation Coalition* (blog), November 22, 2021, <https://www.dpconline.org/blog/a-foot-in-the-door-is-worth-two-on-the-desk>; William Kilbride, “Digital Preservation and Climate Change: Provocation to and from COP26,” *Digital Preservation Coalition* (blog), November 22, 2021, <https://www.dpconline.org/blog/digital-preservation-and-climate-change-provocation-to-and-from-cop26>; Jenny Mitcham, “Enacting Environmentally Sustainable Preservation: Some Thoughts,” *Digital Preservation Coalition* (blog), November 22, 2021, <https://www.dpconline.org/blog/enacting-environmentally-sustainable-preservation-some-thoughts>; William Kilbride, “Digital Preservation and Environmental Sustainability: Five Themes for the Future,” *Digital Preservation Coalition* (blog), December 3, 2021, <https://www.dpconline.org/blog/environmental-digipres-for-ripdasa>.

435Rebecca Fraimow, “Doomsday Preppers,” *Project\_arcc* (blog), July 23, 2015, <https://projectarcc.org/2015/07/23/doomsday-preppers/>; Eira Tansey, “The Voice of One Crying Out in the Wilderness: Preservation in the Anthropocene” (Preservation and Archiving Special Interest Group Fall 2016 Meeting, New York, NY, October 28, 2016), <https://eiratansey.com/2016/10/28/pasig-2016-talk-text/>; Cees Hof, “The Threat of the Double Extinction,” *Digital Preservation Coalition* (blog), December 1, 2017, <https://www.dpconline.org/blog/wdpd/the-threat-of-the-double-extinction>; Ese Eunice Anenene and Olawale Oyewole, “Towards Ensuring the Realization of Sustainable Development Goal 16 by Governments in Nigeria: The Role of the Archives,” *Comma* 2019, no. 1 (June 2019): 29–36, <https://doi.org/10.3828/comma.2019.1.3>; William Kilbride, “Breaking Down Barriers: World Digital Preservation Day 2021,” *Digital Preservation Coalition* (blog), November 3, 2021, <https://www.dpconline.org/blog/wdpd/wkilbride-wdpd21>; Henrik Jochumsen, Jamie Johnston, and Andreas Vårheim, “Pursuing Sustainable Futures through LAMs,” in *Libraries, Archives, and Museums in Transition : Changes, Challenges, and Convergence in a Scandinavian Perspective*, ed. Casper Hvenegaard Rasmussen, Kerstin Rydbeck, and Håkon Larsen (Abingdon, UK: Routledge, 2022),

essential for any climate action, and therefore good for the climate.<sup>436</sup> However, Linden cautions, “always already” talk risks greenwashing archival activities that would benefit from critical evaluation.<sup>437</sup> Indeed, Sampson questions whether it's possible for archives that compete for collections to succeed by making sustainability part of every decision.<sup>438</sup> Instead, sustainability takes time, effort, and resources from activities like preservation, access, and appraisal, putting archives at a disadvantage relative to other repositories.

### 3.6.2. Contending the purpose of archives

Voices from the literature contend over whether archives matter in a crisis, work towards social justice, or can be trusted at all. In a crisis, Salvatore argues, record keeping isn't a priority for governments and is less useful than other forms of cultural heritage.<sup>439</sup> Climate disaster exposes digital archives' fragility, prompting Demb and Schneier to ask why libraries and archives are “working so hard to preserve digital information against such great odds.”<sup>440</sup> Some argue that archives are essential for justice – “a life raft,” according to Hocking and Biagioni –

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215–28; William Kilbride, “The Anthropocene Remembered: Digital Memory After the Climate Crisis,” *Digital Preservation Coalition* (blog), May 26, 2023, <https://www.dpconline.org/blog/the-anthropocene-remembered-digital-memory-after-the-climate-crisis>.

436 William Kilbride, “Memories from the Anthropocene: Digital Preservation in a Time of Climate Crisis,” *Digital Preservation Coalition* (blog), November 4, 2022, <https://www.dpconline.org/blog/memories-from-the-anthropocene-digital-preservation-in-a-time-of-climate-crisis>; William Kilbride, “DP Disrupted: A Blue Shield for the Electronic Battlefield,” *Digital Preservation Coalition* (blog), April 3, 2023, <https://www.dpconline.org/blog/dp-disrupted-a-blue-shield-for-the-electronic-battlefield>; William Kilbride, “Coda and Canon: World Digital Preservation Day 2023,” *Digital Preservation Coalition* (blog), November 3, 2023, <https://www.dpconline.org/blog/wdpd/wdpd2023-kilbride-finale>.

437 Jeremy Linden, “Getting Greener and Creating the Optimal: The State of Sustainability Research and the Preservation Environment,” *AIC News*, March 2012.

438 This argument assumes a special collections, rare book, or manuscript-collecting context. Competition for collections isn't universally relevant to archives. Sampson, “Thoughts on Environmental Sustainability.”

439 Cecilia Salvatore, “Lest They Be Forgotten: Archives, Recordkeeping, and Cultural Heritage Preservation in the Commonwealth of the Northern Marianas Islands (and Micronesia),” *Comma* 2011, no. 1 (2011): 61–69, <https://doi.org/10.3828/comma.2011.1.05>.

440 Sarah Demb and Bruce Schneier, “When the Lights Go Out: Digital Information and Existential Risk” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-i007>.

but there are many more questions around whether archival work is adequate to achieving it.<sup>441</sup> Can sharing open data stop a government from gutting other public programs?<sup>442</sup> Can data rescue fight campaigns to dismantle science agencies and services?<sup>443</sup> Do archivists have answers to the “vast and moneyed fossil fuel interests” whose pet strategy is to “attack knowledge and expertise”?<sup>444</sup> Montenegro describes how records-based processes for political recognition privilege forms of evidence that don't exist, or are hard to assemble from scattered sources; can archival workers undo this trap of continual dispossession?<sup>445</sup> What recourse for archival workers when – as Llewellyn and Buchanan relate – the state slates a major archives facility for closure based on racist land valuation and no public process?<sup>446</sup>

Trust in institutions also occupies members of this enunciatory community. Some argue that the role of archivists is to restore trust in records, recordkeepers, and expertise in order to fight skepticism, amateurism, and misinformation.<sup>447</sup> After all, they are always already concerned with

441 Sir Shridath Ramphal, “Sharing Memory through Globalisation,” *Comma* 2006, no. 3-4: CITRA 2006 (January 2006): 1–4, <https://doi.org/10.3828/comma.2006.3-4.2>; John Hocking and Chiara Biagioni, “Out of the Box, into the World: The Contribution of Archives and Archivists to Today’s World,” *Comma* 2016, no. 1–2 (2016): 16.

442 Jo Bates, “‘This Is What Modern Deregulation Looks like’: Co-Optation and Contestation in the Shaping of the UK’s Open Government Data Initiative,” *The Journal of Community Informatics* 8, no. 2: Special Issue: Community Informatics and Open Government Data (2012), <https://doi.org/10.15353/joci.v8i2.3038>.

443 Jerome Whittington, “Environmental Data, Guerilla Archiving, and the Trump Transition,” *Fieldsights* (blog), January 17, 2017, <https://culanth.org/fieldsights/environmental-data-guerrilla-archiving-and-the-trump-transition>.

444 Eira Tansey, “When the Unbearable Becomes Inevitable: Archives and Climate Change” (*Fierce Urgencies: The Social Responsibility of Collecting and Protecting Data*, New Haven, CT, 2017), <https://eiratansey.com/2017/05/16/fierce-urgencies-2017/>.

445 Maria Montenegro, “Re-Placing Evidence: Locating Archival Displacements in the US Federal Acknowledgment Process,” in *Disputed Archival Heritage*, ed. James Lowry (London: Routledge, 2023), 87–119.

446 As Llewellyn and Buchanan argue, social equity is meant to be a principle of government but wasn’t followed in the proposed closing of the National Archives at Seattle (NAS). Although many people depend on the records there, including members of tribes and immigrant communities, the Public Buildings Reform Board instead calculated the real estate value of the facility with a formula based on Seattle’s racist history of land use, zoning, anti-dx̣ẉəḅəṣ̌ (Duwamish) ordinances, racial covenants, and alien laws. The process ignored the actual nature of archives work, offered an extremely short public comment period, and held no public meetings in the Pacific Northwest region. A ludicrous plan to centralize records in another regional facility and digitize everything merely concentrates risks from climate change and other forms of disaster. Megan E. Llewellyn and Sarah A. Buchanan, “Will the Last Archivist in Seattle Please Turn Out the Lights: Value and the National Archives,” *Journal of Western Archives* 11, no. 1 (2020): Article 7, <https://doi.org/10.26077/af9d-9587>.

447 Gilliland and McKemmish, “Recordkeeping Metadata”; Kate Theimer, “What Is the Professional Archivist’s Role in the Evolving Archival Space?”, Society of Georgia Archivists Annual Meeting Keynote Address, 2014,” *Provenance, Journal of the Society of Georgia Archivists* 32, no. 1 (2014): 11–27.

wicked problems like climate flux, and have a responsibility to document controversy.<sup>448</sup>

Peterson considers the Universal Declaration of Human Rights a touchstone for understanding record keeping responsibilities during climate crisis.<sup>449</sup> However, as histories of standards show, institutions develop universal norms by measuring and encoding bodily harms from particular disasters – casting doubt on the trustworthiness of the universal.<sup>450</sup> Even more concretely, archivists have thrown out town records “in the midst of an active Tribal legal battle involving matters of sovereignty, recognition, and land,” and frequently credit missing child welfare records to “unsubstantiated stories of natural disasters such as fires or floods.”<sup>451</sup> There are plenty of reasons to mistrust institutions, actually.

### 3.6.3. Advocating and activating through archives

Amid this debate, advocacy for archives takes particular shapes in the literature. Archivists should try to influence regulations on buildings, energy, pollution, the cost of preservation, and “the public interest in privately held content.”<sup>452</sup> Against challenges like an unstable climate and neoliberalism's consequences, Tansey argues that a massive reinvestment in archives is necessary: staffing increases for public archives, nationwide continuity and response planning,

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448Eliot Wilczek, “Archival Engagements with Wicked Problems,” *The American Archivist* 84, no. 1 (Spring/Summer 2021): 468–501, <https://doi.org/10.17723/0360-9081-84.2.468>; Julie Herrada, “Letters to the Unabomber: A Case Study and Some Reflections,” *Archival Issues* 28, no. 1 (2004 2003): 35–46.

449Trudy Huskamp Peterson, “The Universal Declaration of Human Rights: An Archival Commentary,” *Comma* 2020, no. 1–2 (August 2021): 33–86, <https://doi.org/10.3828/comma.2020.4>.

450Karen Barad, “No Small Matter: Mushroom Clouds, Ecologies of Nothingness, and Strange Topologies of Spacetime mattering,” in *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, ed. Anna Lowenhaupt Tsing et al. (Minneapolis, MN: University of Minnesota Press, 2017), G103–20.

451Christine DeLucia, “Caretaking Around Collecting and the Digital Turn: Lessons in Ongoing Opportunities and Challenges from the Native Northeast,” in *Afterlives of Indigenous Archives: Essays in Honor of the Occom Circle*, ed. Ivy Schweitzer and Gordon Henry (Hanover, NH: Dartmouth College Press, 2019), 84; Nicola Laurent, Cate O’Neill, and Kirsten Wright, “Convenient Fires and Floods and Impossible Archival Imaginaries Describing the Missing Records of Children’s Institutions,” *Archivaria* 94: Toward Person-Centred Archival Theory and Praxis (Winter 2022): 100.

452Tim Harris, “Buildings for the Future - Sustainable Archive Buildings,” *Comma* 2005, no. 1 (January 2005): 1–6, <https://doi.org/10.3828/coma.2005.1.10>; Abby Smith, “Valuing Preservation,” *Library Trends* 56, no. 1 (Summer 2007): 19.

and watershed-based documentation of climate transformations.<sup>453</sup> Archivists must expand their user base and raise the profile of archivists in society through public programming; otherwise there is “nothing in the average person's experience to convince them that archives are needy institutions.”<sup>454</sup> Climate scientists and policymakers are potential advocates for long-term investment in digital preservation, according to a 2010 U.S. task force on digital preservation.<sup>455</sup> Because funders and administrators drive change in the field, rather than archival workers or activists, archivists must save up anecdotes to show how their collections and activities serve these decision-makers' interests.<sup>456</sup>

Records-related activism is broader than archives funding, as seen for example in calls to hold governments and corporations accountable for environmental damage and information access.<sup>457</sup> As Murti recounts, activists fight enclosure on multiple fronts in land use, arts, and archival practices.<sup>458</sup> According to Monserrate, people have organized against future construction of cloud computing facilities where they live, with little result.<sup>459</sup> Data activists emerging from

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453Eira Tansey, *A Green New Deal for Archives* (Alexandria, VA: Council on Library and Information Resources, 2023), <https://www.clir.org/pubs/reports/a-green-new-deal-for-archives/>.

454Ray Edmondson, “Raising Awareness on Climate Change” (AMIA 2016: 26th Annual Conference of the Association of Moving Image Archivists, Pittsburgh, PA, 2016); Elsie T. Freeman, “Buying Quarter Inch Holes: Public Support Through Results,” *The Midwestern Archivist* 10, no. 2 (1985): 89–97; Patricia J. Rettig, “Water Tables: A Case Study of a Successful Archival Fund-Raising Event,” *The American Archivist* 73, no. 1 (Spring/Summer 2010): 204–18, <https://doi.org/10.17723/aarc.73.1.670850x317681420>.

455Blue Ribbon Task Force on Sustainable Digital Preservation and Access, “Sustainable Economics for a Digital Planet: Ensuring Long-Term Access to Digital Information” (La Jolla, CA: Blue Ribbon Task Force on Sustainable Digital Preservation and Access, 2010), [https://web.archive.org/web/20100609192705/http://brtf.sdsc.edu/biblio/BRTF\\_Final\\_Report.pdf](https://web.archive.org/web/20100609192705/http://brtf.sdsc.edu/biblio/BRTF_Final_Report.pdf).

456Roe, *Advocacy and Awareness*; Linden, “Getting Greener”; David Carmicheal, “The Georgia Archives Budget: An Unfolding Crisis,” *Provenance, Journal of the Society of Georgia Archivists* 31, no. 1: Special Issue on Advocacy (January 2013): 7–13; Kathleen D. Roe, “Let’s Give Them Something to Talk About,” *Provenance, Journal of the Society of Georgia Archivists* 28, no. 1 (2010): 5–18.

457Michael Cook, “Appraisal and Access: We Should Expect Changes Driven by the Media and by Public Awareness,” *Records Management Journal* 20, no. 1 (2010): 72–77; Laurel Beckley-Jackson, “‘Don’t Drink the Water’: The Camp Lejeune Water Contamination Incident,” *DttP: Documents to the People* 44, no. 4 (Winter 2016): 4–9, <https://doi.org/10.5860/dttp.v44i4.6223>; Richard D. Valpy, “For the Purpose of Accountability: The Need for a Comprehensive Recordkeeping Act,” *Archivaria* 88 (Fall 2019): 198–229.

458Yoshi Fajar Kresno Murti, “Introduction: Recycling! Archival Work and Archiving Art and Culture in Indonesia,” in *Arsipelago! Archival Work & Archiving Art & Culture in Indonesia*, ed. Farah Wardani and Yoshi Fajar Kresno Murti (Yogyakarta, Indonesia: Indonesian Visual Art Archive (IVAA), 2014), viii.

459Steven Gonzalez Monserrate, “After the Cloud: Rethinking Data Ecologies through Anthropology & Speculative

protest movements preserve data, documents, and websites as part of their advocacy, stepping in where institutions are immobile.<sup>460</sup> Currie et al. describe how other activists use data-based tactics to respond to new forms of surveillance and “challenge authoritative accounts” of environmental conditions.<sup>461</sup> Through records and community organizing, Platt writes, archives can provide roadmaps for activism to a new generation.<sup>462</sup> Archives and archival research can support local food activism, as in Buchanan and Bastian's case study.<sup>463</sup> Turning to climate activism, Besser et al. assert that archival workers and educators can accomplish through bottom-up action what institutions can't or won't do.<sup>464</sup> They must address issues including digital

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Fiction” (iPres 2022 Glasgow 18th International Conference on Digital Preservation, Glasgow, Scotland, September 15, 2022), <https://www.youtube.com/watch?v=pFCqgmLgqzg>.

460Two high-profile U.S.-based examples, also mentioned earlier in this chapter, consist largely of academics who publish frequently about their activities. Data Refuge is a network that organized “DataRescue” volunteer archiving events. The Environmental Data Governance Initiative (EDGI) is another network using preservation in environmental activism. On Data Refuge and DataRescue, see for example: Laura Millar, “On the Crest of a Wave: Transforming the Archival Future,” *Archives and Manuscripts* 45, no. 2 (2017): 59–76, <https://doi.org/10.1080/01576895.2017.1328696>; Eira Tansey, “ARCChivists, Keep Your Eye on OpenGov Efforts,” *Project arcc* (blog), January 18, 2017, <https://projectarcc.org/2017/01/18/arcchivists-keep-your-eye-on-opengov-efforts/>; Rachel Appel, “DataRescue Philly: Environmental Data Archiving, Workflows, and Description,” *Project arcc* (blog), January 26, 2017, <https://projectarcc.org/2017/01/26/datarescue-philly-environmental-data-archiving-workflows-and-description/>; Margaret Janz, “Maintaining Access to Public Data: Lessons from Data Refuge,” *Against the Grain* 29, no. 6 (December 2017): 30, 32–33; Patricia Sleeman, “The Question of What Can We Do in This Political Climate... Has, Again, a Relatively Modest Answer: Small Interventions with Grand Intention,” *Digital Preservation Coalition* (blog), November 21, 2018, <https://www.dpconline.org/blog/wdpd/what-can-we-do-in-this-political-climate>. On EDGI, see for example: Samantha Cross, “Archivists on the Issues: The Neutrality Lie and Archiving in the Now,” *Issues & Advocacy* (blog), March 27, 2017, <https://issuesandadvocacy.wordpress.com/2017/03/27/archivists-on-the-issues-the-neutrality-lie-and-archiving-in-the-now>; Lourdes A. Vera et al., “Data Resistance: A Social Movement Organizational Autoethnography of the Environmental Data and Governance Initiative,” *Mobilization* 23, no. 4 (December 2018): 511–29, <https://doi.org/10.17813/1086-671x-24-4-511>; Lourdes A. Vera et al., “When Data Justice and Environmental Justice Meet: Formulating a Response to Extractive Logic through Environmental Data Justice,” *Information, Communication & Society* 22, no. 7: Data Justice (May 2019): 1012–28, <https://doi.org/10.1080/1369118X.2019.1596293>; Eric Nost et al., “Visualizing Changes to US Federal Environmental Agency Websites, 2016–2020,” *PLoS ONE* 16, no. 2 (2021): 3; Merlin Chowkwanyun and Chris Sellers, “What Went on in the Trump EPA? Announcing a New FOIA Archive,” *Environmental Data & Governance Initiative* (blog), July 5, 2022, <https://envirodatagov.org/what-went-on-in-the-trump-epa-announcing-a-new-foia-archive/>.

461Morgan L. Currie, Britt S. Paris, and Joan M. Donovan, “What Difference Do Data Make? Data Management and Social Change,” *Online Information Review* 43, no. 6 (October 2019): 973.

462Vanessa Louise Platt, “Restor(y)ng Community Identity through the Archive of Ken Saro-Wiwa,” *Archives and Records* 39, no. 2 (2018): 139–57, <https://doi.org/10.1080/23257962.2017.1363032>.

463Alexandrina Buchanan and Michelle Bastian, “Activating the Archive: Rethinking the Role of Traditional Archives for Local Activist Projects,” *Archival Science* 15 (2015): 429–51, <https://doi.org/10.1007/s10502-015-9247-3>.

464Howard Besser et al., “Plenary and Discussion” (Libraries and Archives in the Anthropocene: A Colloquium,

preservation waste and energy use, education, training, “stable funding streams” for climate adaptation, emotional support for coping, and engaging broad communities in and out of archives.<sup>465</sup> They fight ideological battles over climate, like the writers who take down technocapitalist aspirations to rescue humanity from extinction by saving everything.<sup>466</sup> Teach-ins are a key venue – inspired by student climate movements and calling back to Vietnam-era popular political education – that play to participants' strengths as archivists, researchers, and teachers.<sup>467</sup> Information workers' skills would be invaluable to environmental justice movements resisting petrostates, Tansey says.<sup>468</sup> These are some of the ways archival workers can contribute their skills to climate action, *as* archival workers.

### 3.7. Recognizing multiple ways of knowing: conflicts, records, and memory

Archives and climate interact through multiple ways of knowing, in and out of archives. As Russell argues, “incommensurate” knowledge systems often result in hierarchy.<sup>469</sup> Nineteenth-century “collectors” benefited from Indigenous peoples' knowledge of the land, but reorganized that knowledge in ways that supported colonial projects.<sup>470</sup> The collections they assembled aren't

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New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-i005>.

465Krista Jamieson et al., “#Archivists4ClimateAction: A Look at the Present & Future of Archives and Climate Change” (Association of Canadian Archivists Annual Conference, Virtual Conference, 2020).

466Tansey, “Review of *Archival Futures*”; Bethany Nowviskie, “Digital Humanities in the Anthropocene,” *Digital Scholarship in the Humanities* 30, no. Supplement 1 (2015): i4–15, <https://doi.org/10.1093/llc/fqv015>; David Rosenthal, “Seeds or Code?,” *DSHR's Blog* (blog), November 19, 2019, <https://blog.dshr.org/2019/11/seeds-or-code.html>; David Rosenthal, “Talk at TTI/Vanguard Conference,” *DSHR's Blog* (blog), December 8, 2021, <https://blog.dshr.org/2021/12/talk-at-ttivanguard-conference.html>; Hogan and Roberts, “Archiving for Extinction.”

467Itza Carbajal and Ted Lee, “If Not Now, When? Archivists Respond to Climate Change,” *Archival Outlook*, December 2019; Itza Carbajal, “The Conversation Must Go On: Climate Change and Archival Practice,” *BloggERS!* (blog), December 15, 2020, <https://saaers.wordpress.com/2020/12/15/the-conversation-must-go-on-climate-change-and-archival-practice/>.

468Eira Tansey, “What We Don't Know About What We Can't See: Information and Hidden Infrastructure” (Access 2019, Edmonton, AB, 2019), <http://eiratansey.com/2019/11/27/what-we-dont-know-about-what-we-cant-see-information-and-hidden-infrastructure/>.

469Russell, “Indigenous Knowledge and Archives,” 174.

470Kelly Wisecup, “Entangled Archives: Cherokee Interventions in Language Collecting,” in *Afterlives of Indigenous Archives: Essays in Honor of the Occom Circle*, ed. Ivy Schweitzer and Gordon Henry (Hanover, NH: Dartmouth College Press, 2019), 120–38, <https://digitalcommons.dartmouth.edu/facoa/3983>; Laura Elsie

necessarily accessible today; for example, as Chepchirchir et al. find, “most of the indigenous information accumulated by colonial district officers and early missionaries cannot be located in many archival institutions in Africa.”<sup>471</sup> Wareham writes that colonial paper archives displaced traditional forms of documentation and continue to “constitute vital parts of the evidential systems for the countries to which they relate.”<sup>472</sup> According to Fixico, archives have stifled Native American ways of thinking and communicating by shaping materials and knowledge into inappropriate formats separated from context, and through conventions that don't support Native researchers' ways of analyzing and solving problems.<sup>473</sup> Practices like segregating “records that are understood as Indigenous” from other archives effectively claim that colonialism is over rather than ongoing, writes Castron.<sup>474</sup> In the case of maps and GIS data, such separations also erase the importance of cartographic materials in altering the distribution and use of land. Today, government agencies either devalue Indigenous knowledge (IK) or apply it in ways that fail to prioritize or acknowledge Indigenous peoples' self-determination, goals, and interests.<sup>475</sup> Environmental laws that protect Indigenous cultural heritage and traditional knowledge are examples of “regimes [that] try to fit [Indigenous] systems of knowledge and understanding into Western legal concepts,” according to McKemmish et al.<sup>476</sup> Furthermore, Almeida and Hoyer

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Garinger, “Flora and *Fonds*: Activating Herbaria as Archives” (Master of Arts, Winnipeg, Manitoba, Treaty 1 Territory, University of Manitoba, 2021), <http://hdl.handle.net/1993/35824>.

471 Sally Chepchirchir, Tom Kwanya, and Alice Kamau, “Maximising the Socioeconomic Value of Indigenous Knowledge through Policies and Legislation in Kenya,” *Global Knowledge, Memory and Communication* 68, no. 1/2 (2019): 64.

472 Evelyn Wareham, “From Explorers to Evangelists: Archivists, Recordkeeping, and Remembering in the Pacific Islands,” *Archival Science* 2 (2002): 199.

473 Donald L. Fixico, “The Native American Researcher: Another View of Historical Documents,” *The Midwestern Archivist* 8, no. 2 (1983): 5–15.

474 Melissa Castron, “Colonialism, Computerized: The Canada Land Inventory and the Canada Geographic Information System at Library and Archives Canada,” *Archivaria* 93 (Spring 2022): 147.

475 Chepchirchir et al., “Maximising the Socioeconomic”; Deborah McGregor, “Indigenous Knowledge Systems in Environmental Governance in Canada,” *KULA: Knowledge Creation, Dissemination, and Preservation Studies* 15, no. 1: Special Issue: Indigenous Knowledges (2021), <https://doi.org/10.18357/kula.148>.

476 Sue McKemmish et al., “Resetting Relationships: Archives and Indigenous Human Rights in Australia,” *Archives and Manuscripts* 39, no. 1 (May 2011): 120.

argue, both Anthropocene narratives and archival theories fail to go beyond either notions of the professional (archivists and academics) or disciplinary boundaries.<sup>477</sup> The entanglement of research and capital is to blame: wealth legitimizes knowledge and determines what perspectives dominate in public discourses.

Numerous examples show how alternative records respond to conflicts between community knowledge and official records, mostly regarding marginalized people who have lost access to land. Records and oral histories support political organizing against specific intersections of extractive capitalism and environmental injustice. For instance, in the wake of plantation agriculture, as Greiner describes, a community memory place could help (re)surface original place names and traditional, land-based practices.<sup>478</sup> Memory projects about national parks connect official histories with records by people whom the parks displaced or disrupted.<sup>479</sup> Others gather oral histories to document local environmental movements or in support of specific campaigns.<sup>480</sup> In one case study by Tola, activists reclaimed a polluted former industrial site in Rome, uncovered records of a factory that once stood there, and used the records to conduct memory work with former workers and longtime residents of the area.<sup>481</sup> Hicks describes how

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477Almeida and Hoyer, “Living Archive.”

478Rachel Elise Greiner, “‘We Call to the Voices of Waiialua’: Envisioning a Waiialua Heritage Center Connecting Past, Present and Future” (Master of Arts, University of Hawai‘i at Mānoa, 2021), <http://hdl.handle.net/10125/75875>.

479Ronald Rudin, “Voices of Kouchibouguac,” *Oral History Forum d’histoire Orale* 30: Talking Green: Oral History and Environmental History (2010), <http://www.oralhistoryforum.ca/index.php/ohf/article/view/390>; Christine Homa, “Shenandoah National Park: The Human Cost of Conservation,” *DttP: Documents to the People* 49, no. 3/4 (Fall/Winter 2021): 37–41, <https://doi.org/10.5860/dttP.v49i3/4.7689>; Burke, “Capturing Conversations.”

480Lianne Leddy, “Interviewing Nookomis and Other Reflections: The Promise of Community Collaboration,” *Oral History Forum d’histoire Orale* 30: Talking Green: Oral History and Environmental History (2010), <http://www.oralhistoryforum.ca/index.php/ohf/article/view/386>; David Todd, “Texas Legacy,” *Oral History Forum d’histoire Orale* 30: Talking Green: Oral History and Environmental History (2010), <http://www.oralhistoryforum.ca/index.php/ohf/article/view/394>; Fereshteh Toosi, “UP THE CREEK! A Site-Specific Oral History Project,” *Oral History Forum d’histoire Orale* 30: Talking Green: Oral History and Environmental History (2010), <http://www.oralhistoryforum.ca/index.php/ohf/article/view/391>.

481Miriam Tola, “The Archive and the Lake: Labor, Toxicity, and the Making of Cosmopolitical Commons in Rome, Italy,” *Environmental Humanities* 11, no. 1 (May 2019): 194–215, <https://doi.org/10.1215/22011919-7349499>.

Iowa environmentalists and farmers battling globalization each demonstrate a kind of planetary-level imagined community in their archival records.<sup>482</sup>

States and international creditors use records to displace people in the name of development, as Johnston explains.<sup>483</sup> Creating local documentation and auditing official records have been powerful tools for displaced people to respond to these conditions.<sup>484</sup> Weizman gives an example of comparing contemporary images captured from handmade kites, with a 1945 archival collection of aerial photographs, to provide evidence of the permanence and continuity of Bedouin settlements in areas of Palestine.<sup>485</sup> The combination of records counters official narratives and land use policies that displaced traditional residents, contributed to drought, and produced a decades-long cycle of displacement and return. Community documentation of human rights abuses is essential, Drake demonstrates, because natural disasters offers agents of the state cover for fabricating records.<sup>486</sup> Bubandt describes how people affected by disasters collect evidence for compensation claims while participating in informal economies and networks of mutual support.<sup>487</sup> Community records that counter official records are an important evidence base for investigations, but often advocates must find alternative paths to make claims when shut out of official channels. For example, legal knowledge is often at odds with the kinds of evidence

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482Scott Hicks, "Jane Smiley's *A Thousand Acres* (1991) and Archival Reimaginings of Eco-Cosmopolitanism," *Environmental Humanities* 2, no. 1 (May 2013): 1–20, <https://doi.org/10.1215/22011919-3610324>.

483Barbara Rose Johnston, "Reparations for Dam Displaced Communities? Report from the Chixoy Dam Legacy Issues Meeting, July 23, 2003, Pacux, Guatemala," *Capitalism, Nature, Socialism* 15, no. 1 (2004): 113–19, <https://doi.org/10.1080/1045575032000189046>.

484Johnston, "Reparations for Dam Displaced Communities?"; Barbara Rose Johnston, "Action-Research and Environmental Justice: Lessons from Guatemala's Chixoy Dam," in *The Routledge Companion to the Environmental Humanities*, ed. Ursula K. Heise, John Christensen, and Michelle Niemann (London: Routledge, 2017), 174–84.

485Eyal Weizman, *Forensic Architecture: Violence at the Threshold of Detectability* (New York: Zone Books, 2017).

486Drake, "Insurgent Citizens."

487Nils Bubandt, "Haunted Geologies: Spirits, Stones, and the Necropolitics of the Anthropocene," in *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, ed. Anna Lowenhaupt Tsing et al. (Minneapolis, MN: University of Minnesota Press, 2017), G121–41.

that best represent marginalized people's claims of climate and environmental injustice.<sup>488</sup> Some whose ancestors have “no records, no objects, no birth certificates” in archives, like *bonhomme*, turn instead to traditional practices like storytelling and healing to reconnect with revolutionary histories.<sup>489</sup> Community members involved in creating records strengthen their relationships and develop critical insider-outsider knowledge in the process.<sup>490</sup>

There are ample decline narratives available to anyone thinking about archives and climate instability; for example, Nowviskie states that all cultural heritage collections together are “one vast archive of extinction.”<sup>491</sup> According to Harris, archivists find themselves in an “endgame” where few pieces are left to play but the conclusion remains uncertain.<sup>492</sup> However, some writers deploy decline narratives as a call to action. The need for climate action can catalyze a personal existential crisis as well as a sense of “professional and moral responsibility,” as it did for Davis.<sup>493</sup> Climate change promises “archival obliteration,” writes Winn, so palliative care for archives – a dignified death – could mean dispersing away from institutions.<sup>494</sup> It's time for archival workers to stop being afraid of loss, and to accept not knowing for certain whether they have taken the right course of action: “I really hope we'll never know whether we successfully destroyed our planet or not.”<sup>495</sup>

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488 Anne Bellows, “Holding Local Governments Accountable for Environmental Discrimination: The Promise of California Government Code § 65008,” *Ecology Law Quarterly* 41, no. 1 (2014): 1–35; Pearl Kan, “Towards a Critical Poiesis: Climate Justice and Displacement,” *Virginia Environmental Law Journal* 33, no. 1 (2015): 23–55.

489 *edna bonhomme*, “Collective Herbal Healing: A Counter-Archive in the Making,” *COVEN Berlin* (blog), November 12, 2019, <https://www.covenberlin.com/collective-herbal-healing-a-counter-archive-in-the-making/>.

490 Leddy, “Interviewing Nookomis”; Johnston, “Action-Research and Environmental Justice.”

491 Bethany Nowviskie, “Change Us, Too” (RBMS 2019, Baltimore, MD, 2019), <http://nowviskie.org/2019/change-us-too/>.

492 Verne Harris, “Jacques Derrida Meets Nelson Mandela: Archival Ethics at the Endgame,” *Archival Science* 11 (March 2011): 113–24, <https://doi.org/10.1007/s10502-010-9111-4>.

493 Casey Davis, “Nothing to Fear but Inaction and Division,” *Project\_arcc* (blog), August 14, 2015, <https://projectarcc.org/2015/08/14/nothing-to-fear-but-inaction-and-division/>.

494 Winn, “Dying Well,” 4.

495 Besser et al., “Plenary and Discussion”; Sam Winn, “Our Monstrous Archives: Memory and the End of Time” (2021 Archival Education and Research Initiative, Virtual Conference, 2021), <https://medium.com/on-archivy/our-monstrous-archives-memory-and-the-end-of-time-d439359ca5f2>.

### 3.8. Re-organizing archives: responsive networks, changing relationships

Engaging with climate and environment has led archival workers to re-organize their practices in a few ways. One area is building networks to share knowledge across fields. Another outcome is questioning and bending standards. And a third set of outcomes is proposing alternative ways to organize archives, relative to what's familiar.

#### 3.8.1. Sharing knowledge and resources through networks

Archival workers concerned about environmental instability first look for allies in other disciplines.<sup>496</sup> Techniques and expertise from outside the profession, such as traditional preservation methods or place-based pedagogy, can transform archival practices.<sup>497</sup> From the field of ecology, biomes, biodiversity, and other metaphors have made their way into archival literature.<sup>498</sup> Concepts like “natural archives” and “sedimentation” of records emerge from centuries of dialogue between archives and geology, each field turning to the other for a language of legitimacy.<sup>499</sup> As Lauriault et al. describe, the emergence of data curation as a distinct

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496Karen L. Pavelka and Snowden Becker, “Introduction,” ed. Melissa Tedone (From Gray Areas to Green Areas: Developing Sustainable Practices in Preservation Environments, Austin, TX, 2007), <https://web.archive.org/web/20100620112941/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings.html>; Joanna Sassoon, “Sharing Our Story: An Archaeology of Archival Thought,” *Archives and Manuscripts* 35, no. 2 (November 2007): 40–54; Eira Tansey, “A Multitude of Problems Needs a Multitude of Voices,” *Project\_arcc* (blog), September 22, 2015, <https://projectarcc.org/2015/09/22/a-multitude-of-problems-needs-a-multitude-of-voices/>.

497Miriam Centeno, “Following the Practice of Mushiboshi or ‘Drying Bugs’: Why Airing out Your Dirty Laundry Can Lead to Good Preservation Practices” (Library Research Showcase at the University of IL at Urbana-Champaign, Champaign, IL, 2014), <https://hdl.handle.net/2142/55795>; Carey Beam and Carrie Schwier, “Learning in Place: The Teaching Archivist and Place-Based Education,” *Archival Issues* 39, no. 1 (2018): 7–25, <https://doi.org/10.31274/archivalissues.11046>; Carli V. Lowe, “Partnering Preservation with Sustainability,” *The American Archivist* 83, no. 1 (Spring/Summer 2020): 144–64, <https://doi.org/10.17723/0360-9081-83.1.144>; Carrie Schwier and Carey Champion, “Place-Based Instruction in Archives: Our Pedagogical Roots,” *Comma* 2018, no. 1/2 (2020): 195–204, <https://doi.org/10.3828/comma.2018.18>.

498Moore, “Birds of a Feather”; Sayre, “Alexandrian Library.”

499Susi K. Frank and Kjetil A. Jakobsen, “Introduction: The Arctic as an Archive,” in *Arctic Archives: Ice, Memory and Entropy*, ed. Susi K. Frank and Kjetil A. Jakobsen (Bielefeld, Germany: transcript, 2019), 10–17; Georg Toepfer, “On Similarities and Differences between Cultural and Natural Archives,” in *Arctic Archives: Ice, Memory and Entropy*, ed. Susi K. Frank and Kjetil A. Jakobsen (Bielefeld, Germany: transcript, 2019), 21–36; Juan Ilerbaig, “Archives as Sediments: Metaphors of Deposition and Archival Thinking,” *Archival Science* 21 (2021): 83–95, <https://doi.org/10.1007/s10502-020-09350-z>.

discipline shows a balance of different priorities: authenticity matters most to archivists, while provenance and data quality matter more to scientists.<sup>500</sup>

Network-building is especially active in the area of disaster planning. Local, regional, national, and international networks can help archival workers learn from one another, improve disaster preparation, and bridge from emergency assistance into long-term partnerships.<sup>501</sup> Such networks can also press government emergency planners to involve cultural heritage in disaster mitigation, relief, and recovery. Individuals can begin taking small steps towards climate action by having conversations and forming committees to share knowledge about sustainability in workplaces.<sup>502</sup> Communities of practice can help archival workers connect the dots between local

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500 Tracey P. Lauriault et al., “Today’s Data Are Part of Tomorrow’s Research: Archival Issues in the Sciences,” *Archivaria* 64 (Fall 2007): 123–79.

501 Randy Silverman, “Toward a National Disaster Response Protocol,” *Libraries & the Cultural Record* 41, no. 4 (Fall 2006): 497–511; S. Victor Fleischer and Mark J. Heppner, “Disaster Planning for Libraries and Archives: What You Need to Know and How to Do It,” *Library & Archival Security* 22, no. 2 (2009): 125–40, <https://doi.org/10.1080/01960070902904167>; “Developing Cooperative Disaster Networks for Cultural Institutions: A White Paper on the Pennsylvania Cultural Resilience Network (PaCRN)” (Philadelphia, PA: Conservation Center for Art & Historic Artifacts (CCAHA), January 2017), <https://ccaha.org/resources/developing-cooperative-disaster-networks-cultural-institutions-white-paper-pennsylvania>; Miriam Centeno, “Every Drop Counts: The Recovery of Libraries and Archives in Puerto Rico after Hurricane Maria” (Libraries, Literatures, and Literacies Minitalks, The University of Illinois iSchool and the Mortenson Center for International Library Programs, February 22, 2018), <https://conifer.rhizome.org/HurricaneMariaPR/libraries-archives-and-museums-in-the-aftermath-of-hurricane-maria/20180808102250/https://us.bbcollab.com/collab/ui/session/playback>; Zara Ali and Ashleigh Morris, “Report: ‘The Working Conference on Regional Approaches on Disaster Recovery and Heritage Preservation’, Sint Maarten (30 July – 2 August, 2018),” *Universiteit Leiden* (blog), August 27, 2018, <https://www.universiteitleiden.nl/nexus1492/news/report-%E2%80%9Cthe-working-conference-on-regional-approaches-on-disaster-recovery-and-heritage-preservation%E2%80%9D-sint-maarten-30-july-%E2%80%93-2-august-2018>; Eira Tansey, “U.S. Archives and Climate Change” (University of Illinois at Urbana-Champaign Minitalks :: Minicharlas, Champaign-Urbana, IL, 2021), [https://mediaspace.illinois.edu/media/t/1\\_ak1ec2yu](https://mediaspace.illinois.edu/media/t/1_ak1ec2yu); Rita Tjien Foo, “Capacity Building on Preservation of Documentary Heritage and Disaster Risk Reduction for Memory Institutions,” in *Preservation of Documentary Heritage through Policy Development and Capacity Building* (Paris: UNESCO Memory of the World (MoW) Programme, 2022), 30–31, <https://unesdoc.unesco.org/ark:/48223/pf0000380655>; Rainer Jedlitschka, “‘Together We Are Strong’: Emergency Associations for the Protection of Germany’s Cultural Heritage,” *The American Archivist* 85, no. 2 (Fall/Winter 2022): 334–58, <https://doi.org/10.17723/2327-9702-85.2.334>.

502 Madeleine Charney and Petra Hauke, “Global Action on the Urgency of Climate Change: Academic and Research Libraries’ Contributions,” *College & Research Libraries* 81, no. 3 (March 2020): 114–17, <https://doi.org/10.5860/crln.81.3.114>; Georgina Robinson, “Come Hell or High Water: Climate Action by Archives, Records and Cultural Heritage Professionals in the United Kingdom,” *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 314–40, <https://doi.org/10.1108/RMJ-10-2020-0036>.

outcomes of fluctuating climate and other concerns such as working conditions, as Loa and Kruger observe.<sup>503</sup> Henderson and Edwards suggest that mobilizing such networks can lead to larger (if still incremental) moves like establishing sustainability as a core professional value.<sup>504</sup>

### 3.8.2. Questioning, bending, changing standards

Many archival workers come to question, bend, and change standard practices in response to encounters with climate and environment. For example, a better standard for preservation would address changing biomes and other specific effects of environmental transformation, accept some degree of loss or “mutability,” and aim only for what's achievable.<sup>505</sup> Traditional and creative methods – like using cloves to keep insects out of a newspaper archive, as Marintan et al. describe – have a place in such adaptation.<sup>506</sup> Bonandrini suggest that standards for storage environments could become more flexible by specifying which measures should be strict and which have a larger range of acceptable measures – affording multiple ways to meet technical

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503Berlin Loa and Pamela Nett Kruger, “Community of Practice at the California State University Special Collections and University Archives,” *Journal of Western Archives* 12, no. 1: Western Archivists Meeting special issue (2021): Article 1.

504Jane Henderson and Susan Edwards, “Setting Our Direction: Working Together to Develop a National Approach to Conservation of Cultural Heritage in Wales,” *Archives and Records* 40, no. 2 (2019): 179–97, <https://doi.org/10.1080/23257962.2018.1563775>.

505Elizabeth Pye and Dean Sully, “Evolving Challenges, Developing Skills,” *The Conservator* 30, no. 1 (2007): 19–37, <https://doi.org/10.1080/01410096.2007.9995221>; Ernest A. Conrad, “Climate Control Systems Design and Climate Change” (The Getty Conservation Institute (GCI). Experts’ Roundtable on Sustainable Climate Management Strategies, Tenerife, Spain, 2007), [https://www.getty.edu/conservation/our\\_projects/science/climate/paper\\_conrad.pdf](https://www.getty.edu/conservation/our_projects/science/climate/paper_conrad.pdf); Christine Wamunyima Kanyengo, “Preservation and Conservation of Information Resources in the University of Zambia Library,” *Journal of Archival Organization* 7, no. 3 (2009): 116–28, <https://doi.org/10.1080/15332740903126736>; Jerry Podany, “Facing Change: Basing Heritage Conservation on Broader Stewardship Principles” (25th Annual National Archives Preservation Conference: Conservation<sup>2</sup> = Preserving Collections x Our Environment, Hyattsville, MD, 2011), <https://www.archives.gov/preservation/conferences/2011/presentations/podany.pdf>; Jeremy Linden, “Sustainable Film Preservation: Can We Have Our Cake and Eat It Too?” (AMIA 2016: 26th Annual Conference of the Association of Moving Image Archivists, Pittsburgh, PA, 2016); Ben Goldman, “It’s Not Easy Being Green(e): Digital Preservation in the Age of Climate Change,” in *Archival Values: Essays in Honor of Mark A. Greene*, ed. Christine Weideman and Mary Caldera (Chicago, IL: Society of American Archivists, 2019), 174–87.

506Mega Alif Marintan, Febriyanto, and Tamara Adriani Salim, “The Greatness of Clove : Challenges in Preserving Historic Newsprint Collection in Monumen Pers Nasional Solo, Indonesia” (IFLA World Library and Information Congress 2018 – Transform Libraries, Transform Societies, Kuala Lumpur, Malaysia: International Federation of Library Associations and Institutions, 2018), <https://library.ifla.org/id/eprint/2280>.

requirements.<sup>507</sup> To reduce e-waste and environmental impacts, archival workers undertake difficult, relational work to rethink their data storage norms and question the drive to “scale up.”<sup>508</sup> Examples from digital preservation include more selective and iterative appraisal; reducing use of energy- and data-intensive methods; producing lower-quality surrogates; establishing tiered storage; and scheduling computational processes to run less frequently and while there is lower demand on regional energy grids.<sup>509</sup> Aligning with organizational sustainability goals and plans can help implement the changes, says Pendergrass.<sup>510</sup>

### 3.8.3. Organizing archives through time, technology, land

Studying climate and environment leads archival workers to propose ways of organizing archives that they don't already see in practice. Archives might be organized with another sense of time, another way of describing records or developing collections, through changing relationships to technology, or around relationships to land. For example, data curation for ecological research should operate on a longer time scale that allows for many different uses.<sup>511</sup>

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507Bruno Bonandrini, “The National Archives Conservation Building at Pierrefitte-Sur-Seine and Its Air Treatment System,” *International Preservation News*, December 2011.

508Stacie Williams, “Sustainable Digital Scholarship: Shrinking Our Footprint, Broadening Our Impact,” *On Archivy* (blog), October 5, 2017, <https://medium.com/on-archivy/sustainable-digital-scholarship-the-limitations-ofspace-662627e19e37>; Colin Post and Alexandra Chassanoff, “Beyond the Workflow: Archivists’ Aspirations for Digital Curation Practices,” *Archival Science* 21 (2021): 413–32, <https://doi.org/10.1007/s10502-021-09365-0>.

509Keith Pendergrass et al., “Toward Environmentally Sustainable Digital Preservation,” *The American Archivist* 82, no. 1 (Spring/Summer 2019): 165–206, <https://doi.org/10.17723/0360-9081-82.1.165>; Keith Pendergrass, “Integrating Environmental Sustainability into Policies and Workflows,” *bloggERS!* (blog), July 28, 2020, <https://saaers.wordpress.com/2020/07/28/integrating-environmental-sustainability-into-policies-and-workflows/>; Tammi Kim and Karla Irwin, “Learning from Las Vegas: Adapting Workflows for Managing Born-Digital Design Records,” *The American Archivist* 84, no. 2 (Fall/Winter 2021): 355–73, <https://doi.org/10.17723/0360-9081-84.2.355>; Jacob Bickford, “Save Our Spiders: Crawler Traps and Sustainability at the UK Government Web Archive,” *Digital Preservation Coalition* (blog), October 31, 2023, <https://www.dpconline.org/blog/wdpd/wdpd2023-bickford>.

510Pendergrass, “Integrating Environmental Sustainability.”

511Helena Karasti and Karen S. Baker, “Digital Data Practices and the Long Term Ecological Research Program Growing Global,” *International Journal of Digital Curation* 3, no. 2 (2008): 42–58, <https://doi.org/10.2218/ijdc.v3i2.57>; Alessandro Antonello and Mark Carey, “Ice Cores and the Temporalities of the Global Environment,” *Environmental Humanities* 9, no. 2 (November 2017): 181–203, <https://doi.org/10.1215/22011919-4215202>.

Although some archival conventions follow the idea of history as forward progress, Upward et al. write, there are actually no endpoints in archival work.<sup>512</sup> It would be more accurate to think of records as “perduring” or “always in a process of becoming” rather than “enduring” or fixed in space and time.<sup>513</sup> In Daston's telling, archival time already disrupts linearity by moving more slowly than science or society, in order to preserve knowledge through continuity.<sup>514</sup> Rydén finds that archivists' temporal depth may extend further back in time than most people's but not that much further forward.<sup>515</sup> They temper uncertainty about humanity's future with faith in continuous archival management. For Winn, however, imagining preservation as a long-term activity makes less and less sense given the “temporal and scalar distortions” that characterize environmental flux.<sup>516</sup> Nowviskie suggests that the concept of a usable past may be more appropriate for documenting climate change.<sup>517</sup> For example, Walshe and Foley note that Pacific peoples' shared knowledges include past experiences of surviving disasters, living through fluctuations in the environment, and maintaining networks across Oceania.<sup>518</sup>

In response to the vast scale of climate change, archivists propose often contrasting ways of describing records and developing collections. One writer proposes atomizing archives by thinking in terms of records rather than collections, while another zooms out to see archives

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512Frank Upward, Sue McKemmish, and Barbara Reed, “Counterpoint: Archivists and Changing Social and Information Spaces: A Continuum Approach to Recordkeeping and Archiving in Online Cultures,” *Archivaria* 72 (Fall 2011): 197–237.

513Upward et al., “Counterpoint,” 203.

514Lorraine Daston, “The Time of the Archive,” in *Science in the Archives: Pasts, Presents, Futures* (Chicago, IL: University of Chicago Press, 2017), 329–32.

515Reine Rydén, “Archivists and Time: Conceptions of Time and Long-Term Information Preservation among Archivists,” *Journal of Contemporary Archival Studies* 6 (2019): Article 6.

516Winn, “Dying Well,” 3.

517Bethany Nowviskie, “Speculative Collections and the Emancipatory Library” (The Transformation of Academic Library Collecting: A Symposium Inspired by Dan C. Hazen, Boston, MA, 2016), <http://nowviskie.org/2016/speculative-collections/>.

518Rory A. Walshe and Aideen M. Foley, “Learning from the Archives of Island Jurisdictions: Why and How Island History Should Inform Disaster Risk Reduction and Climate Action,” *Small States & Territories* 4, no. 2 (November 2021): 205–30.

within “a totality of relations” for which the planet acts as a contextual ground.<sup>519</sup> Archival appraisal of environmental records should derive from a holistic understanding of context, urges Loewen.<sup>520</sup> Collections should treat climate, environment, and place as elements of provenance that shape local politics and culture.<sup>521</sup> Recommendations for collection development also include statistical sampling borrowed from biodiversity research; public nomination of websites; and strictly quantitative retention criteria to reduce storage and energy use.<sup>522</sup> Others argue that distributed preservation networks – horizontal organizations with relative autonomy among nodes – can protect politically contested research, prevent local squabbles from undermining large collaborative efforts, and take the place of institutions after serious social breakdowns.<sup>523</sup>

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519Frans Smit, “Records, Hyperobjects and Authenticity,” in *Archives in Liquid Times*, ed. Arnoud Glaudemans, Rienk Jonker, and Frans Smit (Den Haag: Stichting Archiefpublicaties, 2017), 248–65, <http://library.oapen.org/handle/20.500.12657/30942>; Erik Radio, “Documents for the Nonhuman,” *Journal of Critical Library and Information Studies* 3, no. 1: Libraries and Archives in the Anthropocene (2020), <https://doi.org/10.24242/jclis.v3i1.108>.

520Candace Loewen, “From Human Neglect to Planetary Survival: New Approaches to the Appraisal of Environmental Records,” *Archivaria* 33 (Winter 1991/92): 87–103.

521Shu Liu and Linda M. Meyer, “Carnations and the Floriculture Industry: Documenting the Cultivation and Marketing of Flowers in Colorado,” *Journal of Archival Organization* 6, no. 1–2 (2008): 6–23, <https://doi.org/10.1080/15332740802234672>; Amy Brunvand, “Re-Localizing the Library Environmental Humanities Models” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-s05-i001>.

522Tamar Dayan and Bella Galil, “Natural History Collections as Dynamic Research Archives,” in *Stepping in the Same River Twice: Replication in Biological Research*, ed. Ayelet Shavit and Aaron M. Ellison (New Haven, CT: Yale University Press, 2017), 55–63; Salvador Barragan, “Infonomics and the Environment,” *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 303–13, <https://doi.org/10.1108/RMJ-11-2020-0038>; Andrea Deri et al., “UK Web Archive Climate Change Collection,” *UK Web Archive Blog* (blog), October 4, 2021, <https://blogs.bl.uk/webarchive/2021/10/uk-web-archive-climate-change-collection.html>.

523David Rosenthal, “Why Preserve E-Journals? To Preserve the Record,” *DSHR’s Blog* (blog), June 10, 2007, <https://blog.dshr.org/2007/06/why-preserve-e-journals-to-preserve.html>; John Erde, “Constructing Archives of the Occupy Movement,” *Archives and Records* 35, no. 2 (2014): 77–92, <https://doi.org/10.1080/23257962.2014.943168>; Rick Prelinger, “Collecting Strategies for the Anthropocene” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-i002>; Abigail De Kosnik, “Piracy Is the Future of Culture: Speculating about Media Preservation after Collapse,” *Third Text* 34, no. 1 (2020): 62–70, <https://doi.org/10.1080/09528822.2019.1663687>; Imogen G. Wilson, “Low Resolution .JPGs and Collaborative Networks: Dreaming a Sustainable Digital Archive” (Master of Arts, London, ON, University of Western Ontario, 2022), <https://ir.lib.uwo.ca/etd/8717>.

Lyman describes the concept of “environment” as an idea “reflecting an ecological crisis caused by technology, yet which must be managed by technology.”<sup>524</sup> Climate action is an opportunity to change archives' and archival workers' relationships to technology, for instance by educating students about infrastructures – as Bettivia suggests.<sup>525</sup> Digital preservation as a matter of “discrete documents” in repositories may give way to practices that can better handle dynamic content, or behave more like relational, traditional forms of knowledge.<sup>526</sup> Preservation itself combats the “forced” or planned obsolescence that characterizes current technologies.<sup>527</sup>

Still others discuss organizing archives around relationships to land, for example by bioregion, and shifting ownership to communities associated with that land.<sup>528</sup> This calls for rethinking provenance and creatorship. For instance, McReynolds argues that “environmental hazards” and “day-to-day information on natural resources by individuals” each shape rural life and should therefore play a role in documenting rural areas.<sup>529</sup> Battley recounts how, for a New

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524Peter Lyman, “Invention, the Mother of Necessity: Archival Research in 2020,” *The American Archivist* 57, no. 1: Special Issue: 2020 Vision (Winter 1994): 116.

525Rhiannon Bettivia, “Educating Digital Stewards,” *Digital Preservation Coalition* (blog), November 29, 2017, <https://www.dpconline.org/blog/wdpd/educating-digital-stewards-blog>.

526Cat Kutay, “Locating Knowledge,” *Archives and Manuscripts* 47, no. 1 (2019): 72–93, <https://doi.org/10.1080/01576895.2018.1551143>; “Spotlight: Interview with Tessa Walsh, Artefactual,” *bloggERS!* (blog), May 26, 2020, <https://saaers.wordpress.com/2020/05/26/spotlight-interview-with-tessa-walsh-artefactual/>.

527Carbajal, “Home of Memory”; William Kilbride, “On Being a Good Ancestor,” *Digital Preservation Coalition* (blog), November 5, 2021, <https://www.dpconline.org/blog/wdpd/wkilbride-wdpd21-closing>.

528Hugh A. Taylor, “Recycling the Past: The Archivist in the Age of Ecology,” *Archivaria* 35: Proceedings of the ACA Seventeenth Annual Conference, Montreal 12–15 September 1992 (Spring 1993): 203–13, <https://archivaria.ca/index.php/archivaria/article/view/11898>; Jane Turner, “Working Cooperatively for a Sustainable Future: TotalArchives in Nanaimo,” *Archivaria* 39 (Spring 1995): 177–83; Eira Tansey, “A Green New Deal for Archivists,” July 30, 2020, <https://eiratansey.com/2020/07/30/a-green-new-deal-for-archivists/>; Lindsay Kistler Mattock and Aiden M. Bettine, “Situating Community Archives Along the Continuum of Community-Engaged Archival Praxis: Autonomy, Independence, and the Archival Impulse,” *Archival Issues* 42, no. 1 (2023): 47–70, <https://doi.org/10.31274/archivalissues.16294>; Marcelle Scott and Robyn Sloggett, “Changed Responses to the Changing Threat of Climate-Induced Fire and Drought,” in *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott (London: Routledge, 2023), 99–117, <https://doi.org/10.4324/9781003163312-7>; Eira Tansey, *A Green New Deal for Archives* (Alexandria, VA: Council on Library and Information Resources, 2023), <https://www.clir.org/pubs/reports/a-green-new-deal-for-archives/>.

529Samuel A. McReynolds, “Rural Life in New England,” *The American Archivist* 50, no. 4 (Fall 1987): 532–48, <https://doi.org/10.17723/aarc.50.4.547233h430199214>.

Zealand hiking club, being outside together was an essential element in their collective memorymaking, and therefore part of the provenance for their shared records.<sup>530</sup> Centering matter, material, and the nonhuman in archival work makes it possible to accept the reality of decay, degradation, and other changes over time.<sup>531</sup> Embodied, land-based cultural practices already constitute systems of evidence and knowledge for Indigenous peoples, and embodiment becomes even more important under threat of climate-driven displacement.<sup>532</sup> Kim suggests that traditional cultural rights, in tandem with and modifying intellectual property rights, could be the basis for protecting at-risk intangible cultural heritage.<sup>533</sup> Archival means of implementing the UN Declaration on the Rights of Indigenous Peoples are similarly “weaving together a plurality of legal orders,” according to Frogner.<sup>534</sup> The affordances of digital archives can appropriately represent ecological and kinship networks that are important to Indigenous communities, as paper archives don't.<sup>535</sup> For Ghaddar, a “provenance in place,” or asking what land(s) records belong to, is one step towards decolonizing practices of archival ownership, with the goal of

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530Belinda Battley, “Authenticity in Places of Belonging: Community Collective Memory as a Complex, Adaptive Recordkeeping System,” *Archives and Manuscripts* 48, no. 1 (2020): 59–79, <https://doi.org/10.1080/01576895.2019.1628649>.

531Stuchel, “Material Provocations”; Elizabeth England, “The Archive of Place and Land Art as Archive: A Case Study of Spiral Jetty,” *The American Archivist* 80, no. 2 (Fall/Winter 2017): 336–54, <https://doi.org/10.17723/0360-9081-80.2.336>; Kate Brown, “Marie Curie’s Fingerprint: Nuclear Spelunking in the Chernobyl Zone,” in *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, ed. Anna Lowenhaupt Tsing et al. (Minneapolis, MN: University of Minnesota Press, 2017), G42.

532Geir Grenerson, Kjell Kemi, and Steinar Nilsen, “Landscapes as Documents: The Relationship between Traditional Sámi Terminology and the Concepts of Document and Documentation,” *Journal of Documentation* 72, no. 6 (2016): 1181–96, <https://doi.org/10.1108/JD-01-2016-0010>; Joy Lehuanani Enomoto and D. Keali’i MacKenzie, “Saltwater Archives: Native Knowledge in a Time of Rising Tides,” in *Routledge Handbook of Postcolonial Politics*, ed. Olivia Rutazibwa and Robbie Shilliam (New York: Routledge, 2018), 289–301.

533Hee-Eun Kim, “Changing Climate, Changing Culture: Adding the Climate Change Dimension to the Protection of Intangible Cultural Heritage,” *International Journal of Cultural Property* 18 (2011): 259–90, <https://doi.org/10.1017/S094073911100021X>.

534Raymond O. Frogner, “The Train from Dunvegan: Implementing the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) in Public Archives in Canada,” *Archival Science* 22 (2022): 209–38, <https://doi.org/10.1007/s10502-021-09373-0>.

535Siobhan Senior, “Decolonizing the Archive: Digitizing Native Literature with Students and Tribal Communities,” *Resilience: A Journal of the Environmental Humanities* 1, no. 3 (2014): 69–85; Marie Balsley Taylor, “Recovering Indigenous Kinship: Community, Conversion, and the Digital Turn,” in *Afterlives of Indigenous Archives: Essays in Honor of the Occom Circle*, ed. Ivy Schweitzer and Gordon Henry (Hanover, NH: Dartmouth College Press, 2019), 139–55, <https://digitalcommons.dartmouth.edu/facoa/3983>.

repatriating “land, economic sovereignty, freedom and dignity.”<sup>536</sup> Projects that implement many of these understandings include a year-long digital stewardship training program that “emphasized the entire lifecycle of digital stewardship rooted in cohort members' cultural values and community priorities,” and an effort to digitize Inuit tribal materials while revising research data standards to reflect community needs and interests.<sup>537</sup>

### **3.9. Recovering and responding: lessons from living through disaster**

Finally, archival workers who are already experiencing climate impacts describe what it's like to recover from disaster, and insist on archives being part of large-scale climate responses. Disaster recovery activities include assessing the damage, salvaging records, using records in disaster recovery, and moving archives altogether.

#### **3.9.1. Assessing the damage, salvaging records**

In a hurricane, for example, repositories experience damage to collections, equipment, buildings, and furniture through mold, leaks, water damage, flooding, fallen trees, and structural damage – and power loss makes it all worse.<sup>538</sup> Waterlogged volumes expand so much they jump off the stacks, while falling debris crushes boxes of records.<sup>539</sup> Natural disasters repeatedly

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<sup>536</sup>Ghaddar, “Provenance in Place,” 51.

<sup>537</sup>Lotus Norton-Wisla, “Cycles of Learning and Growth: Developing the Tribal Digital Stewardship Cohort Program Guided by Indigenous Perspectives,” *Journal of Western Archives* 13, no. 1 (2022): 1; Erin Yunes, Cana Uluak Itchuaqiyaq, and Kara Long, “The Rematriation Project: Building Capacity for Community Digital Archiving in Northwest Alaska,” in *19th International Conference on Digital Preservation 2023* (iPRES 2023, Champaign-Urbana, IL, 2023), 192–96.

<sup>538</sup>Hilda Teresa Ayala-González, “Puerto Rico’s Libraries, Archives and Museums Road to Recovery: A Timeline of Events After Hurricane Maria” (ARCHIVES\*RECORDS 2018 Joint Annual Meeting of the Council of State Archivists, National Association of Government Archives and Records Administrators, and the Society of American Archivists, Washington, DC, 2018); Osvaldo Rivera Soto, “Interview: Archivo de Medios Audiovisuales of the University of Puerto Rico, Río Piedras Campus,” interview by Ana I. Steidel, December 2018, <https://scalar.usc.edu/works/prlamrecovery/interviewarchivomedioprpp>; Miguel Santiago Rivera, “Interview: University of Puerto Rico Río Piedras Campus Library System,” interview by Ana I. Steidel, December 2018, <https://scalar.usc.edu/works/prlamrecovery/interviewuprplibrarysystem>.

<sup>539</sup>John A. Aarons, “Guidelines for Salvaging Water-Damaged Materials,” in *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, ed. Hyacinth Brown (Kingston, Jamaica: Jamaica Library Association,

destroyed entire family archives in the Canary Islands, Gutiérrez-de-Armas recounts.<sup>540</sup> Amarasiri enumerates impacts of a 2004 tsunami in Sri Lanka: trauma from death and displacement, loss of vital and public records as well as palm leaf manuscripts in Buddhist temple libraries.<sup>541</sup> Mundanely, restoring material exposed to seawater and mixed with mud and sand was a challenge. According to Lupkin et al., recovery tasks in repositories can include not only salvaging historical records, but also recovering organizational records and data such as financial information.<sup>542</sup> Although devastating, these kinds of impairments to documents and equipment fall within the category of “non-structural damage” from an insurance perspective, and emergency responders won't necessarily try to save records when clearing buildings of toxic materials.<sup>543</sup> As Rodriguez explains, not only do archives and records workers face hazards and unstable conditions when trying to salvage records, but disasters can affect their entire lives: from structurally damaged homes and workplaces to unsafe transportation to limited water, food, power, and medical care.<sup>544</sup> Climate disasters have widespread emotional, environmental, and economic impacts; archives' disaster plans should account for “staff issues” such as trauma, physical injury, displacement, unmet survival needs, and work suddenly becoming very, very

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1989), 22–25; Irene Wainwright, “New Orleans Public Library Spared Major Damage in Hurricane Katrina,” *Southwestern Archivist*, November 2005.

540Judit Gutiérrez-de-Armas, “Archival Practices in Early Modern Spain: Transformation, Destruction and (Re)Construction of Family Archives in the Canary Islands,” *Archives and Manuscripts* 48, no. 1 (2020): 5–24, <https://doi.org/10.1080/01576895.2019.1604243>.

541Upali Amarasiri, “Rising from the Wreckage: Development of Tsunami-Affected Libraries in Sri Lanka,” *IFLA Journal* 31, no. 4 (December 2005): 307–14, <https://doi.org/10.1177/0340035205061383>.

542Joshua Lupkin, Sally Krash, and Eric Wedig, “Recovering Wet Materials: Disaster Plans and Recovery Workflows,” in *The Importance of Being Earnest: Charleston Conference Proceedings, 2014*, ed. Beth R. Bernhardt, Leah H. Hinds, and Katina P. Strauch (West Lafayette, IN: Purdue University Press, 2015), 433–41, <https://doi.org/10.5703/1288284315601>.

543Swartz, “Dealing with Disaster”; Jennifer Cox, “Opening Address, Seminar on the Protection of Documents and Vital Data in the Event of Emergencies,” in *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, ed. Hyacinth Brown (Kingston, Jamaica: Jamaica Library Association, 1989), 5; Susan Tucker, “Hurricane Katrina: Notes from the Field,” *Southwestern Archivist*, November 2005.

544Evelyn Milagros Rodriguez, “I’m a Librarian in Puerto Rico, and This Is My Hurricane Maria Survival Story,” *The Conversation* (blog), October 26, 2017, <https://theconversation.com/im-a-librarian-in-puerto-rico-and-this-is-my-hurricane-maria-survival-story-86426>.

difficult.<sup>545</sup> Malek demonstrates how climate grief and mourning for lost places are part of the experiences of archivists.<sup>546</sup>

Disasters may cut archives off from regional support like trucking, storage, supplies, and individuals willing to help, cautions Lundquist.<sup>547</sup> McKay advises that it's risky to rely on a single source of aid, or store records in a single system with just one way to find them.<sup>548</sup> Although advance planning is more effective than trying to make decisions in the middle of a crisis, Aarons observes that disaster management studies from large, wealthy countries experiencing localized disasters are of little use during all-encompassing events.<sup>549</sup> Equipment designed and tested for one climate and power grid can fail in another climate or with a less reliable source of electricity. As Ayala-González explains, loss of communication infrastructure hampers the ability to either conduct salvage or coordinate with outside sources of help like funding, media coverage, supplies, and basic safety information.<sup>550</sup> Following one devastating hurricane, the Jamaican government asked librarians to publish records salvage advice in newspapers.<sup>551</sup> When government response is slow, however, diasporas and professional communities step in, as the examples of Hurricanes Katrina and Maria show.<sup>552</sup> Mutual aid efforts in the immediate aftermath of Maria provided inventories of needs and damages, missing

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545Craig et al., "There Is Disaster Planning"; Ayala-González, "Puerto Rico's Libraries" (2018).

546Claire Malek, "Bowline on a Bight: Doing Right by the Records of Lilian Bland," *Archivaria* 94 (Fall/Winter 2022): 258–83.

547Eric G. Lundquist, *Salvage of Water Damaged Books, Documents, Micrographic and Magnetic Media* (San Francisco, CA: Document Reprocessors of San Francisco, 1986).

548Simon S. McKay, "Storage of Machine-Readable Records," in *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, ed. Hyacinth Brown (Kingston, Jamaica: Jamaica Library Association, 1989), 14.

549John A. Aarons, "Contingency and Response Management: Lessons from Hurricane Gilbert," in *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, ed. Hyacinth Brown (Kingston, Jamaica: Jamaica Library Association, 1989), 39–43.

550Hilda Teresa Ayala-González, "Puerto Rico's Libraries, Archives and Museums Road to Recovery: A Timeline of Events after Hurricane Maria," May 4, 2019, <https://scalar.usc.edu/works/prlamrecovery/index>.

551Aarons, "Contingency and Response."

552Teresa Brinati, "In the Aftermath of Hurricane Katrina," *Archival Outlook*, October 2005; Ayala-González, "Puerto Rico's Libraries" (2019).

map data, and hard-to-find supplies.<sup>553</sup> With sufficient funds, some repositories opened again quickly despite continuing lack of power.<sup>554</sup> Over the following months, local cultural heritage organizations and government agencies organized recovery training, applied for grant funding, and hosted volunteer conservators from the mainland.<sup>555</sup> Documenting all the recovery steps is crucial in planning for the next disaster.<sup>556</sup>

Learning from experience is essential. Several case studies describe archival workers answering calls to help other agencies, organizations, and even private collectors salvage their records and books.<sup>557</sup> One must work fast, improvise, and adapt; low-tech solutions can be some of the most effective. If first responders do salvage personal papers and memorabilia, community efforts can help restore the materials and return them to their owners, building shared capacity for disaster response along the way.<sup>558</sup> Close calls with catastrophe lead some archival workers to

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553 Ayala-González, “Puerto Rico’s Libraries” (2019); Bartolomei and Marrero, “Data, Displacement.”

554 Sandra Rosa, “Interview: Center for Access to Information, Inter American University of Puerto Rico Bayamón Campus,” interview by Natalia M. Lucena Trujillo, April 2019, <https://scalar.usc.edu/works/prlamrecovery/interviewcaibayamon>.

555 Ayala-González, “Puerto Rico’s Libraries” (2018).

556 María del Carmen Maldonado, Interview: Conservatorio de Música de Puerto Rico, interview by Carlos R. González-Rovira, May 2019, <https://scalar.usc.edu/works/prlamrecovery/interviewconservatorio>; Fackson Banda, “Policy Development for the Preservation of Documentary Heritage Through Disaster Risk Reduction,” in *Preservation of Documentary Heritage through Policy Development and Capacity Building* (Paris: UNESCO Memory of the World (MoW) Programme, 2022), 27–29, <https://unesdoc.unesco.org/ark:/48223/pf0000380655>.

557 Lee McGregor and Jim Bruce, “Recovery of Flood Damaged Documents by the Queensland State Archives,” *Archives and Manuscripts* 5, no. 8 (August 1974): 193–99; Toby Murray, “Flood Recovery in Tulsa,” *Illinois Libraries* 67, no. 8 (October 1985): 717–19; Chris Webb, “Disaster Recovery in the York Flood of 2000,” *Journal of the Society of Archivists* 22, no. 2 (2001): 247–52, <https://doi.org/10.1080/00379810120081181>.

558 Several case studies illustrate how archival workers and community volunteers, operating in and out of organizations, organize to recover and restore disaster-damaged materials. They often create additional documentation about the records and other items under salvage, or draw together multiple sources of existing knowledge about the records’ contexts. See for instance: Tara Laver and Elaine Smyth, “First Responders: LSU Assists New Orleans with Hurricane Recovery Efforts,” *Archival Outlook*, December 2005; Yoko Shiraiwa, “Rescuing Tsunami-Damaged Photographs in Japan,” *Journal of the Institute of Conservation* 36, no. 2 (2013): 195–203, <https://doi.org/10.1080/19455224.2013.820205>; Kara Van Malssen, “Recovering the Collection, Establishing the Archive: A Case Study on the Recovery of Eyebeam Art+Technology Center’s Multimedia Collection Following Superstorm Sandy” (AudioVisual Preservation Solutions, April 2013), <https://www.weareavp.com/wp-content/uploads/2013/05/RecoveringTheEyebeamCollection.pdf>; Emily Vinson, “Applying an Established Format to the Houston Archives Bazaar,” *Preservation, Digital Technology & Culture* 48, no. 1 (March 2019): 46–53, <https://doi.org/10.1515/pdct-2018-0034>; Megan Atkinson, “The Tornado Recovery Project at Tennessee Tech: A Case Study in Community Disaster Assistance by an Academic Archives,” *Society of Florida Archivists Journal* 3, no. 1 (May 2022): 1–16.

begin planning for future emergencies, as Wallace describes.<sup>559</sup> Rettig recounts how, after a campus flood, a Colorado university dedicated a percentage of its insurance funds to support an archives about water in the state and region.<sup>560</sup> Matthews advises that an unstable climate requires scaling up existing disaster management practices.<sup>561</sup>

### 3.9.2. Using records in disaster recovery

Records can be useful in disaster recovery, for example when documenting pre- and post-disaster conditions, establishing insurance claims, and preparing for the future.<sup>562</sup> Government agencies may accept alternative forms of records or waive records requirements to make it easier for affected people to access services, as Dearstyne describes.<sup>563</sup> However, according to Carbajal, natural disasters can also result in vulnerable people, including foster children, becoming untraceable in systems.<sup>564</sup> Record-making can help organize mutual aid networks that afford people safety and dignity in a crisis, as Aoki's research shows.<sup>565</sup> Some such networks gel into

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559Allaina M. Wallace, "Asking for Trouble: Preparing for Emergency to Prevent the Disaster," in *Cold Regions: Pivot Points, Focal Points*, ed. Shelly Sommer and Ann Windnagel (24th Polar Libraries Colloquy, Boulder, CO, 2012), 100–106, <https://nsidc.org/sites/default/files/documents/other/plc-24-proceedings-gd-34.pdf>.

560Patricia Rettig, S2 Ep10 The Water Archivist, interview by Tom Bellinger and Greg Dewey, Podcast, 36:11, November 12, 2023, H2O Talk, <https://talkh2o.podbean.com/e/s2-ep10-the-water-archivist/>.

561Graham Matthews, "Disaster Management in the Cultural Heritage Sector: A Perspective of International Activity from the United Kingdom: Lessons and Messages" (IFLA World Library and Information Congress 2007 – Libraries for the future: Progress, Development and Partnerships, Durban, South Africa: International Federation of Library Associations and Institutions, 2007), <https://archive.ifla.org/IV/ifla73/papers/140-Matthews-en.pdf>.

562Basil Monteith, "Insurance As It Relates to the Protection of Documents and Vital Data," in *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, ed. Hyacinth Brown (Kingston, Jamaica: Jamaica Library Association, 1989), 26–27; Debora A. Rougeux, "Processing the CONSOL Energy, Inc. Mine Maps and Records Collection at the University of Pittsburgh," *Journal of Archival Organization* 9, no. 2 (2011): 118–26, <https://doi.org/10.1080/15332748.2011.602600>; Bryan J. Dickerson, "Recovering from Hurricane Sandy: A Municipal Government Archives Role in Disaster Recovery," *Provenance, Journal of the Society of Georgia Archivists* 35, no. 1 (2018): 91–105.

563Bruce W. Dearstyne, "Taking Charge: Disaster Fallout Reinforces RIM's Importance," *Information Management Journal* 40, no. 4 (August 2006): 37–43.

564Itza Carbajal, "Youth Records During Disasters: The New Orleans Hurricane Katrina Case Study" (Prato 2022 – 20th Annual Community Informatics Research Network Conference: 20 YEARS OF CIRN: Examining the past, present, and future of communities and technology, Prato, Italy, 2022).

565Reiko Aoki, "Collection Development on Women's Earthquake Disaster Experiences and Support Activities in Japan" (IFLA WLIC 2018 – Transform Libraries, Transform Societies, Kuala Lumpur, Malaysia, 2018), 1–22, <https://library.ifla.org/id/eprint/2340>.

political organizing through formal groups, since crises highlight the inequalities that are already part of everyday life. Disaster survivors may not be ready to speak right away, but their testimonies can help make change for the better: “Records of the disaster are unique in that they are assembled slowly over time.”<sup>566</sup>

### 3.9.3. Moving archives

Disaster response can require moving archives altogether, which raises questions of jurisdiction and responsibility according to Sutton.<sup>567</sup> For example, as Gordon-Clark and Shurville write, the trajectory of sea level rise means that when the ocean submerges an island nation state, another state won't replace it.<sup>568</sup> The resulting gap in international law means that new policy instruments must be created, such as copyright treaties or models for bilateral or multilateral agreements.<sup>569</sup> Archival relocation should account for economics and power dynamics; training, knowledge, and languages relevant to the archives involved; and jurisdictional matters that affect access to records and priorities in a further disaster.<sup>570</sup> Tansey observes that, in the U.S., not having a dedicated federal agency for moving archives leads to inconsistent documentation about relocation.<sup>571</sup> Moving archives – whether across the world, to

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566Aoki, “Collection Development,” 4.

567David C. Sutton, “Safe Havens for Archives at Risk: A New International Initiative,” *Comma* 2020, no. 1–2 (August 2021): 87–96, <https://doi.org/10.3828/comma.2020.5>.

568Matthew Gordon-Clark and Simon Shurville, “To Take up Arms against a Sea of Troubles!: Finding Safe Havens for the National Archives of Low-Elevation Pacific Islands and Nations Threatened by Climate Change,” *Archives and Manuscripts* 38, no. 1 (May 2010): 78–93.

569Jean Dryden, “Climate Change, Copyright, and Archives,” *Comma* 2021, no. 2 (2023): 387–97, <https://doi.org/10.3828/coma.2021.34>; Anna Woodham and Matthew Gordon-Clark, “No Man Is an Island Entire of Itself: Legal Frameworks and the Relocation of a Nation’s Archive Due to Rising Sea Levels,” *Comma* 2021, no. 2 (2023): 345–61, <https://doi.org/10.3828/coma.2021.31>.

570Gordon-Clark and Shurville, “To Take up Arms.”

571Eira Tansey, “Archival Adaptation to Climate Change,” *Sustainability: Science, Practice and Policy* 11, no. 2 (2015): 45–56, <https://doi.org/10.1080/15487733.2015.11908146>.

another city, or to a higher floor – requires additional funds and also ways to represent former connections between the records and a particular place.<sup>572</sup>

### 3.9.4. Making archives part of climate response

Many voices in this body of literature insist on archives being part of climate response. Research by Adger et al. shows that climate adaptation strategies should account for “cultural dimensions,” alongside “physical risks” and the political means to mitigate them.<sup>573</sup> Climate responses must mobilize archives and other forms of heritage, and the cultural heritage sector in general, for research, education, policy, and planning.<sup>574</sup> For instance, Lemmon describes how, after Hurricane Katrina, cultural workers became part of a New Orleans-wide plan as first responders, educators, records salvage experts, and documentarians.<sup>575</sup> Activities like preservation and public engagement with cultural heritage should be part of adaptation, write Fatorić and Seekamp.<sup>576</sup> For example, Project ARCC's goals for archives climate action are to protect and promote collections, reduce archival footprints, and document the transforming environment.<sup>577</sup> Other archivists recommend reaching out to communities surrounding environmental records, promoting collections that inspire climate response, setting Net Zero

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572Sr. Jane Aucoin, “Sisters of St. Joseph in New Orleans,” *Southwestern Archivist*, November 2005; Céline Allain and Sophie Guérinot, “Preservation Storage in a Flood Damage Mitigation Effort at the National Library of France,” *IFLA Journal* 48, no. 2 (June 2022): 289–92, <https://doi.org/10.1177/03400352211037703>.

573Adger et al., “Cultural Dimensions of Climate Change.”

574Fiona Macalister, “Preparing for the Future: Mitigating Disasters and Building Resilience in the Cultural Heritage Sector,” *Journal of the Institute of Conservation* 38, no. 2 (2015): 115–29, <https://doi.org/10.1080/19455224.2015.1068201>; ICOMOS Climate Change and Heritage Working Group, “The Future of Our Pasts: Engaging Cultural Heritage in Climate Action” (Paris: International Council on Monuments and Sites, 2019), <https://archive.org/details/cchwgfina/print/page/n1/mode/2up>; Sandra Fatorić and Robbert Biesbroek, “Adapting Cultural Heritage to Climate Change Impacts in the Netherlands: Barriers, Interdependencies, and Strategies for Overcoming Them,” *Climatic Change* 162 (2020): 301–20, <https://doi.org/10.1007/s10584-020-02831-1>.

575Alfred E. Lemmon, “‘Learn from the Past: Build for the Future’: The Historic New Orleans Collection’s Response to Hurricane Katrina,” *Museum Archivist* 22, no. 1 (Winter 2012): 6–9.

576Fatorić and Seekamp, “Are Cultural Heritage and Resources.”

577Casey E. Davis, “Our Story,” *Project\_arcc* (blog), June 6, 2015, <https://projectarcc.org/2015/06/06/our-story/>.

building goals for archives, organizing discussion groups, or supporting “green” business development.<sup>578</sup> Roles for archivists in a just transition away from fossil fuels include documenting the wind energy industry, and mediating information about climate shifts in all their complexity.<sup>579</sup> Actions that support sustainability may be accidental, Evans finds, but records managers, archivists, and information technology workers could do more, and perhaps will do more with encouragement.<sup>580</sup> Soberingly, Tansey observes that archival workers must advocate for a place in parent organizations' climate plans.<sup>581</sup> Disparities in funding, influence, and mobility among archival institutions indicate that resource redistribution should be part of any longer-term climate response.<sup>582</sup> Reliable data on climate-related damage would help archivists develop resilient practices that go above and beyond disaster planning, although permanent changes can be difficult to handle.<sup>583</sup> A key step is to accept that action can mitigate the consequences of change, “the difference between bad and really, really horrible.”<sup>584</sup> Although the situation is dire, according to Tadic the example of 20th-century U.S. air quality regulations shows “that it's possible to reverse negative influences.”<sup>585</sup> Burgess argues that concepts like

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578Patricia J. Rettig, “An Integrative Approach to Archival Outreach: A Case Study of Becoming Part of the Constituents’ Community,” *Journal of Archival Organization* 5, no. 3 (2008): 31–46, <https://doi.org/10.1080/15332740802174175>; Paula Williams, “Exploring the Climate Crisis through the Library’s Collections – National Library of Scotland Blog,” *National Library of Scotland Blog* (blog), November 10, 2021, <https://blog.nls.uk/exploring-the-climate-crisis/>; Maja Maricevic, “Our Role in Building a Brighter Climate Future,” *Knowledge Matters* (blog), November 15, 2022, <https://blogs.bl.uk/living-knowledge/2022/11/our-role-in-building-a-brighter-climate-future-.html>.

579Genna Duplisea, “Scope & Content: Recognizing the Many Climate Change Narratives,” *Project\_arcc* (blog), August 3, 2015, <https://projectarcc.org/2015/08/03/scope-content-recognizing-the-many-climate-change-narratives/>; Kolya Abramsky, Stefan Gsänger, and Elizabeth Bartram, “The Challenge of Archiving the Global Modern Wind Energy Sector,” *Comma* 2021, no. 2 (2023): 317–30, <https://doi.org/10.3828/coma.2021.29>.

580Lois M. Evans, “Leveraging Information Governance and Digital Technologies for Climate Action: An Inquiry into Records Retention and Disposition in Canadian Organizations” (PhD, Vancouver, BC, University of British Columbia, 2022), [10.14288/1.0413056](https://doi.org/10.14288/1.0413056).

581Eira Tansey, “Challenges of Climate Change,” *Issues & Advocacy* (blog), January 26, 2016, <https://issuesandadvocacy.wordpress.com/2016/01/26/challenges-of-climate-change/>.

582Eira Tansey, “Archival Adaptation to Climate Change” (AMIA 2016: 26th Annual Conference of the Association of Moving Image Archivists, Pittsburgh, PA, 2016).

583Tansey, “Archival Adaptation” (2015).

584Besser et al., “Plenary and Discussion.”

585“Preservation Beyond the Bits: An Interview with Linda Tadic,” *bloggERS!* (blog), April 28, 2016, <https://saaers.wordpress.com/2016/04/28/preservation-beyond-the-bits-an-interview-with-linda-tadic/>.

resilience and adaptability complement existing values in the Library and Information Studies (LIS) field, but fall short of sufficient if “you want to radically rethink the project of human life”; and climate crisis presents archival workers with exactly this kind of ethical choice.<sup>586</sup>

### **3.10. Conclusion**

In this chapter, I've described how curating climate records entails building archives as well as managing data. Using climate records involves finding sources and also contesting access to them. In evaluating archival work, authors examine practices, risks, impacts, and the evaluation measures themselves, through a lens of climate. Many describe requirements for the design of sustainable buildings and digital preservation systems. Writing about environmental change brings forth aspects of archival politics like the slow violence suffusing archival practices and advocacy. Recognizing multiple ways of knowing leads archival workers to identify conflicts between knowledge systems, community records that provide alternative testimonies to official records, and memory keeping practices that take place beyond archives. In re-organizing archival practices in light of climate disaster, responsive networks and changing relationships to land and technology are some touchstones. Finally, pragmatic lessons and sharp analyses of archives and environmental instability come from living through, responding to, and recovering from disaster. Across the sections of the review, we've seen how records about climate fit into existing archival norms; how environmental shifts challenges those norms; and how archival workers have begun to think and act differently in anticipation of future climate conditions.

Throughout this literature, archival practice amid environmental flux emerges as a field of ongoing slow violence, within which acute double binds catalyze enunciatory communities of

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<sup>586</sup>John Burgess, “Adaptability and Resilience: A Core LIS Value” (Libraries and Archives in the Anthropocene: A Colloquium, New York, NY, 2017), <https://credo.library.umass.edu/view/full/mums1010-i003>.

action and response. Slow violence characterizes the wake of colonialism, the impacts of austerity, and the conditions in which archival workers attempt climate action. A number of double binds, vexing and contradictory, emerge from this backdrop.

### 3.10.1. In colonialism's wake

Numerous contributions to the literature reveal how archives and records practices contribute to harms, both acutely and unfolding over long periods of time. Publications about the role of archives and record keeping in Pacific Island nations' cultures, governance, and climate adaptation are especially clear about archives having been (and continuing to be) mechanisms of slow violence.<sup>587</sup> Indigenous and settler archivists writing from Canada, South Africa, and Australia also highlight the lasting, archives-related harms of colonialism's slow violence, in areas ranging from the transformation of land to co-opting Indigenous knowledges.<sup>588</sup> When pressing claims for recognition and justice, making the strongest claims may conflict with making the kinds of claims that systems of power and governance will recognize. Yet only those dominant systems can deliver the desired outcome. Colonial destruction of oral traditions, among other knowledge systems, originated this rift and perpetuates the need for impossible choices. As Namhila notes, the timeframe of colonial archives “extends beyond the formal independence of a country, because the colonial archival heritage remains as such, and its character is not automatically changed by a country’s new legal status given that the legacy of previous record keeping practices persists in the content of colonial archives, if not in the new country’s governmental offices.”<sup>589</sup> Colonial archives – mechanisms of domination – remain an evidence

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587Wareham, “From Explorers to Evangelists”; Salvatore, “Lest They Be Forgotten”; Bell, “Dystopian Realities”; Enomoto and MacKenzie, “Saltwater Archives”; Walshe and Foley, “Learning from the Archives of Island Jurisdictions.”

588By contrast, U.S. settler archivists writing about climate and environment have been relatively quiet on these topics.

589Ellen Ndeshi Namhila, “Content and Use of Colonial Archives: An under-Researched Issue,” *Archival Science*

base for making and administering claims in postcolonial nations, but gaps in these archives constrain the scope of possible counter-claims from below.<sup>590</sup> As this body of literature documents, gaining recognition for Indigenous knowledges is often incommensurate with maintaining the knowledges' integrity.<sup>591</sup> Between irreconcilable systems, the colonial disrupts and dominates. Is it possible for archival practices to continue without continually re-enacting epistemicide? How can archival practices change without abdicating responsibility for already-existing connections between people, lands, and records? These questions continue to matter in the context of climate change.

Amid a changing climate, archivists must deal with day-to-day demands so that repositories will continue to function, but also plan for the long-term likelihood of disaster so that archives will continue to exist. With limited means, they can only do one. Archivists seek to follow professional standards, which often conflict with the kinds of resourceful actions that are both most useful and also immediately available in specific climates and institutional contexts. Material is always deteriorating so they have to do *something*. Competing injunctions put pressure on these records stewards: follow professional guidelines and standards or you won't have an archives; bend the standards, which aren't suited to your situation anyway, or you won't have an archives. The double bind persists across archival settings for which standards weren't written. One reason is that those working in under-resourced archives in under-resourced, postcolonial nations rarely have a say in the international bodies that write standards, or hold equal partnerships with the largely Anglophone societies and organizations that export archival

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16, no. 2 (June 2016): 114.

590Chepchirchir et al., "Maximising the Socioeconomic Value"; Montenegro, "Re-placing Evidence."

591Russell, "Indigenous Knowledge and Archives"; Kan, "Towards a Critical Poiesis"; McGregor, "Indigenous Knowledge Systems"; Castron, "Colonialism, Computerized."

norms. All of these power relations, grounded in material conditions and historical contingencies, shape how archival workers respond to climate and environment.

### 3.10.2. Making claims under austerity

A review of climate risks to archives shows that nearly all relate to slow violence, particularly the way archives and records agencies – or record keeping functions in agencies – don't have the resources they need to anticipate risks or respond to disasters. Numerous studies observe lack of maintenance, degradation of archives facilities and infrastructures, inadequate staffing, and insufficient training. For many, lack of resources is a direct legacy of colonialism and austerity. Puerto Rican archivists are frank about how neoliberal policies have affected their organizations and undermined disaster recovery.<sup>592</sup> In Guatemala, dam-affected people's community record keeping responds to the violence enabling neoliberal development.<sup>593</sup> Austerity is less readily apparent in accounts of climate data privatization or fossil fuel funding for archival projects, but it's there between the lines.<sup>594</sup> Defunding diminishes public agencies' capacities and leads them to seek external partners and resources.<sup>595</sup> Austerity means that a government can stand up a program to share open climate data, or fund public services for the poor, but not both.<sup>596</sup> It naturalizes both underfunded archives and the annual threat of losing funding, which traps archival workers in a cycle of advocating to remain the same.<sup>597</sup> On one

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592See for instance Ayala-González, “Archives at the Intersection.”

593Johnston, “Reparations for Dam Displaced Communities?”; Johnston, “Action-Research and Environmental Justice.”

594Condrey et al., “Buffalo on the Beaches”; Morrissey, “Data Management and Global Change Research”; Cirac-Claveras, “Weather Privateers.”

595Austerity continually positions archival workers in double binds that characterize experiences of non-governmental agencies and the nonprofit sector. See for example: Katherine Venter, Denise Currie, and Martin McCracken, “You Can't Win!: The Non-Profit Double-Bind and Experiences of Organisational Contradictions in the Non-Profit and Voluntary Sector,” *Work, Employment and Society* 33, no. 2 (April 2019): 244–61, <https://doi.org/10.1177/0950017017713949>.

596Bates, ““This Is What Modern Deregulation Looks like.””

597Case studies of archival advocacy nearly all assume that losing funding is a year-over-year possibility, but few name the mechanisms through which decision-makers actually remove resources from repository budgets. A

hand is the injunction to appeal to constituents' imaginations and gain support for the mission of archives, or lose funding quietly, without public protest. On the other hand is the demand-threat to do more with less or risk looking incompetent – and still lose funding.<sup>598</sup> Similarly, archival workers must continually advocate for support on climate action, to decision-makers who have no material incentive to either fund archives or help them adapt to a changing climate.<sup>599</sup> Since neither archival work nor meaningful climate response are possible without significant investment, archival workers keep advocating.

Advocates working in the intersections of archives, environmental records, and climate data often respond to patterns of slow violence in existing power structures. For example, double binds characterize the experience of advocating for more transparency and accountability. Both ongoing environmental hazards and climate disasters of increasing frequency heighten the need to regulate corporate activities; but existing U.S. federal and state laws allow corporations to skirt regulation and redress by controlling their own records disclosures. Accountability can't progress beyond the oscillation within laws that require records for regulation while also constraining the ability to acquire records necessary to regulate. In other cases, activists seek to protect climate data and records from political threats, but find that guerilla archiving events are ineffective relative to government agencies' power to destroy records by underfunding. Many environmental uses for records support claims in response to harms rippling out from slow violence, including each instance of creating community records as counter-narratives to official records. In these cases, there is often an acute, catalyzing event that engages everyday people in

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notable exception is Carmicheal's account of attacks in the Georgia state legislature on funding for the state archives. Carmicheal, "Georgia Archives Budget."

598For example, Welch argues that "measuring the purpose and justifying the existence" of archives is necessary to "meet the needs of environmental researchers." In most archives, environmental researchers aren't responsible for allocating funding, so this illustrates the absurd extent to which archivists have come to mistake neoliberal economic policies and precarious budgets for common sense. Welch, "Green' Archivism," 77, 76.

599See chapter 4 for further discussion of climate politics in archival workplaces.

archival practices. Communities creating their own records and archives in response to official documentation do so recognizing that official records are themselves a form of advocacy.<sup>600</sup>

Creating and circulating alternative accounts is in part a struggle to define the future otherwise. In some cases, environmental disasters catalyze the re-formation of communities around a new problem, new activities, and new horizons for what's possible. The literature offers instances in which records are a mechanism for that transformation, or one of several ways to articulate possible futures as a newly transformed community.

Enunciatory communities produce difference, and difference drives their advocacy.<sup>601</sup>

Concepts like endangered data and data rescue have produced their own enunciatory communities, in which few participants seem to agree on exactly how their movement played out and why, or where a movement to preserve access to environmental records should go next. In fact, one of the main points of agreement among writing on data rescues is that the efforts didn't go as expected. In these contexts, archives and records workers are sometimes in position to administer claims for records-based accountability and access. They also join with lawyers, activists, and communities affected by environmental damage in identifying double binds and calling for resolution.

### **3.10.3. Towards climate action**

The effort to identify and implement better climate practices is also fraught with double binds. Examples from digital preservation show that mechanisms for reducing climate impact are incompatible with preservation standard and the demand for services. It's impossible to both

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600In Fortun's framing, too, governments and corporations perform ethics in anticipation of particular futures. See in particular: Johnston, "Reparations for Dam Displaced Communities?"; Drake, "Insurgent Citizens"; Johnston, "Action-Research and Environmental Justice"; Ballesterio, *A Future History of Water*; Tola, "The Archive and the Lake"; Greiner, "*We Call to the Voices of Waiialua*"; Homa, "Shenandoah National Park."

601Timothy K. Choy, "Articulated Knowledges: Environmental Forms after Universality's Demise," *American Anthropologist* 107, no. 1 (March 2005): 5–18, <https://doi.org/10.1525/aa.2005.107.1.005>.

follow best practices and reduce energy consumption, leading to calls for more flexible practices. Cloud service workers incline towards keeping services up and running under all conditions, which conflicts with the need to use less energy – a problem for digital preservation as repositories come to use cloud storage as a matter of course.<sup>602</sup> Slow violence in the supply chain is a concern for some in the archives field, but responses often hinge on the claim that supply chain issues are controllable if archives staff would only purchase the right way. Coordinated consumption with better supply chain research is a form of collective action that doesn't challenge existing power relations in the field.

Messaging around climate action contains plenty of contradictions, too. The claim that an existing practice is always already “green” traps archival workers in a double bind between the pursuit of sustainability and the injunction not to change. *Climate action start with you!* exhorts paper after talk after blog post, but also *don't forget that individual actions aren't enough!* The scale of climate action requires mass participation, so archival workers seek to do what they can from where they are; but what one person can do is wildly inadequate. The continual demand to each, individually take action on our own doesn't allow imagining another way. Archival workers also oscillate between the impetus to take climate action *as archival workers*, and a desire to de-center archives professionals in climate action and discourses.<sup>603</sup> Much of the difficulty lies in academic capture of Anthropocene discourse and archival literature, and corporate capture of academia.<sup>604</sup> Archival workers fight ideological battles against harmful but hegemonic ideas about climate, while working in institutions that help to manufacture consensus.<sup>605</sup> They

602Monserrate, “After the Cloud.”

603See for instance: Lowe, “Partnering Preservation with Sustainability”; Carbajal and Lee, “If Not Now, When?”; Carbajal, “Conversation Must Go On.”

604Almeida and Hoyer, “Living Archive”; Tansey, “Academic Enclosure.”

605Hall et al. describe political consensus as follows: “Because we occupy the same society and belong to roughly the same 'culture,' it is assumed that there is, basically, only one perspective on events: that provided by what is sometimes called the culture, or (by some social scientists) the 'central value system.' This view denies any major structural discrepancies between different groups, or between the very different maps of meaning in a society.

experience contradictory demands to critique from within while also encouraging trust in archives, rightly fearing attacks on public and cultural institutions via neoliberal economic policies and far-right extremism. Furthermore, archival norms foreclose the future towards which they orient. So any sense of archival futures must reconcile to accepting the likelihood of loss and uncertainty of any future at all.<sup>606</sup> The prospect of embracing grief only presents double binds if archival workers are unable to accept death, loss, and grief as ordinary elements in planning for the future.

#### **3.10.4. Enunciatory communities**

Each piece of writing or conversation in this body of literature is an enunciation that has helped to effect a long-term change in perspective: from climate and environment as backdrops for human activities, through changing understandings of the “natural world,” and beginning to acknowledge serious threats to archives and archival work. Together, these enunciations have produced the phenomenon of “archivists concerned about climate change.” Slow violence forms the backdrop for this ongoing act of creation, as do the many social and political movements dedicated to resisting slow violence. We can find some of the clearest articulations of ethics for future archives in proposals to rebuild archives around another set of relationships than the ones that currently organize the field. These proposals each respond to how the interactions between

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This 'consensual' viewpoint has important political consequences, when used as the taken-for-granted basis of communication. It carries the assumption that we also all have roughly the same interests in the society, and that we all roughly have an equal share of power in the society. This is the essence of the idea of the political consensus.” Similar to news media, archives manufacture consensus by identifying and contextualizing events in ways that continually reproduce the perspectives of particular groups, most often and by default powerful elites. Hughes extends cultural studies to describe how appraisal approaches in archives fulfill this function, but could be otherwise. Stuart Hall et al., *Policing the Crisis: Mugging, the State, and Law and Order* (London: Macmillan, 1978), 55; Kit Hughes, “Appraisal as Cartography: Cultural Studies in the Archives,” *The American Archivist* 77, no. 1 (June 3, 2014): 270–96, <https://doi.org/10.17723/aarc.77.1.85175154j4m45578>.  
606Goldman, “Things the Grandchildren Should Know”; Radio, “Documents for the Nonhuman”; Stuchel, “Material Provocations”; Winn, “Dying Well”; Winn, “Our Monstrous Archives.”

archives and climate are sites of profound but also fluid change.<sup>607</sup> Perhaps, this enunciatory community suggests, experimentation and diversity are the most viable ways forward.

Archives and records workers and others contributing to this body of literature coalesce, in many different voices, around the commitment that archives matter to climate research, response, and adaptation. Those who argue that a certain body of data is an archive, or insist on archives being part of research and adaptation, ground this claim in archives being – or being able to be – inherently good. They articulate a vision of the future in which archives, records, archival workers, and communities of records are closely involved in responding to disaster and building a better world in its aftermath. Their perspectives clash at times and mesh at others with those who argue that archival organizations, practices, and workers must radically transform in order to play any kind of role in just climate futures. For these writers, archives' close association with the root causes of slow violence places them among the obstacles to climate response. It may not be possible to reconcile these two stances, which I paint in broad terms, but archival workers don't necessarily need to harmonize in order to press forward on climate response in the field.

In making these ethical negotiations, archival workers speak and act from multiple, changing, sometimes even conflicting positions. Some try to make change from within the heart of a problem. Many who push to evaluate and reduce archives' environmental impacts, for example, don't question the frameworks within which they operate. The problem is a matter of operations; it can be rectified if only one counts the right things the right way. From this perspective, if certain evidence is necessary to make decisions according to existing processes, then the task at

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<sup>607</sup>As Grant observes, the enunciatory communities framework doesn't assume that rational self-interest motivates actors. In fact, many of the conditions that archival workers describe constitute what Fortun characterizes as “an irrational context” to which people can only respond in kind. Contributors to this body of literature who contest the purpose of archives are less interested in whether there will still be good archives jobs, and more concerned with whether the entire archival enterprise is irrational amid changing material conditions. Grant, “Kalamazoo River Spill”; Fortun, *Advocacy After Bhopal*, 13.

hand is to produce the evidence or an appropriate proxy. The literature evaluating climate risks begins to shake some of these assumptions. As they assess risks based on geography, institutional context, the politics of record keeping, and degrees of disaster preparation, contributors demonstrate how many of these conditions stem from inadequate assumptions about the needs of archival enterprises. Often, an accounting of risks comes across as a register of current and future costs that decision-makers haven't addressed. Writing about climate isn't the only form of archival advocacy to feature many differing voices; the papers focusing on different aspects of archival politics show a full range of perspectives and responses that may all be part of archival studies and advocacy, but are often at complete cross-purposes. The extensive literature on contesting access to environmental information and doing activism with records often illustrates the stormy dynamics within this enunciatory community. In many cases, the catalyzing double binds and events stem from archives and records practices themselves, while in others, double binds catalyze archival practices in response. Finally even those who insist on archives being part of climate response reveal internal fragmentation. Some of these writers emphasize aligning with or not being left behind by existing power structures, while others assert that archives and records workers have a choice about their relative degrees of alignment and resistance, in order to achieve transformation. Climate change forces the choice, repeatedly. This tension drives change and advocacy in a both-and approach which, as I'll show through interviews with archival workers (chapter 4), can entail pushing from both the center and the margins. As I've demonstrated throughout this review, dissent, tension, and contradiction exist within the enunciatory community loosely organizing around the double binds of archives and climate change, and actually help hold the community together, in oscillation.

## 4. Recalling past and future to meet the changing present: Archival practices in climate fiction

### 4.1. Introduction

I came to climate fiction seeking lessons about organizing for a more just and equitable future, and found archives, records, memory, and knowledge practices at the heart of each text. Archival readings of seven North American climate novels show that changes in the land, slow violence, and constraints imposed through record keeping each help to produce climate change as emergency. Social formations emerging in the crisis respond with tactics against documentation, while record making remains important to people facing disaster and uncertainty. Relationships of responsibility and collectivity characterize their future-oriented practices, such as intergenerational knowledge keeping and organized resistance to slow violence.

The impetus for this analysis is a desire to make archival practices strange, in order to better understand how they work and how they can change. Similarly, several archivists writing about climate focus their criticism on the archival field's ideological grounding. To begin, archives are too human-centered.<sup>608</sup> Next, the discipline's focus on a narrow idea of the future actually forecloses future possibilities.<sup>609</sup> In reaction, some writers search the past for “lost values to ensure the sheer basic survival of the planet.”<sup>610</sup> Several demonstrate how legal record keeping frameworks encode troubling power relations into knowledge of the changing climate.<sup>611</sup> Finally, institutions and individuals experiencing few climate impacts continue to dominate knowledge

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608Tansey, “When the Unbearable”; Radio, “Documents for the Nonhuman”; Stuchel, “Material Provocations”; Kosciejew, “Concept of Natureculture.”

609Tansey, “Review of *Archival Futures*”; Winn, “Dying Well”; Hogan and Roberts, “Archiving for Extinction.”

610Loewen, “From Human Neglect,” 87.

611McLoughlin, “Environmental History”; Lamdan, “Sunshine for Sale”; Kan, “Towards a Critical Poiesis”; Lamdan, “Beyond FOIA”; Lamdan, “Improving Access”; Lamdan, “Lessons from DataRescue”; Lamdan and Bratspies, “Taking a Page”; Tansey, “Regulation Requires Records”; Tansey, “What We Don't Know”; Tansey, “Regulatory Record-keeping.”

circulation; this casts suspicion on the project of building theories and narratives around a unitary concept of climate change.<sup>612</sup> A double bind runs through these arguments: the impossibility of changing practices without fundamentally rethinking their ideological underpinnings.

In response to these critiques, and building on a provocation by Winn, this chapter looks beyond the archives field to analyze how climate change shapes archival practices in seven novels.<sup>613</sup> These books are works of climate fiction, or “literary works that describe the impact of anthropogenic climate change.”<sup>614</sup> Each text may seem to extend, extrapolate from, or comment on anxieties and conditions of the past and present.<sup>615</sup> Each appeals to the imagination or conscience of certain classes of readers.<sup>616</sup> Some novels treat the past and present as if they're fixed or settled, while others see time and history as contested and in flux.<sup>617</sup> Readers must ask whose future climate fiction extends, and from whose present.<sup>618</sup> For instance, decades-long

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612Almeida and Hoyer, “Living Archive.”

613Winn, “Dying Well.”

614Evans, “Fantastic Futures?”

615Robert Markley, *Kim Stanley Robinson*, Modern Masters of Science Fiction (Urbana, IL: University of Illinois Press, 2019); Roberto J. Ortiz, “Financialization, Climate Change, and the Future of the Capitalist World-Ecology: On Kim Stanley Robinson's *New York 2140*,” *Soundings: An Interdisciplinary Journal* 103, no. 2 (2020): 264–85; Bryan Yazell, “Finding Time in Common: Speculative Fiction and the Precariat in Robinson's *New York 2140*,” in *Precarity in Contemporary Literature and Culture*, ed. Emily J. Hogg and Peter Simonsen (London: Bloomsbury Academic, 2021), 189–202; Conrad Scott, “‘Changing Landscapes’: Ecocritical Dystopianism in Contemporary Indigenous SF Literature,” *Transmotion* 8, no. 1: Indigeneity and the Anthropocene II (June 6, 2022): 10–38, <https://doi.org/10.22024/UniKent/03/tm.979>.

616Markley, *Kim Stanley Robinson*; River Ramuglia, “Cli-Fi, Petroculture, and the Environmental Humanities: An Interview with Stephanie LeMenager,” *Studies in the Novel* 50, no. 1 (Spring 2018): 154–64, <https://doi.org/10.1353/sdn.2018.0008>; Lieven Ameel, “Agency at/of the Waterfront in New York City: *Vision 2020* and *New York 2140*,” *Textual Practice* 34, no. 8 (2020): 1327–43,

<https://doi.org/10.1080/0950236X.2019.1581250>; Bryan Yazell, “A Sociology of Failure: Migration and Narrative Method in US Climate Fiction,” *Configurations* 28, no. 2 (Spring 2020): 155–80,

<https://doi.org/10.1353/con.2020.0009>; Magdalena Mączyńska, “Welcome to the Post-Anthropopolis: Urban Space and Climate Change in Nathaniel Rich's *Odds Against Tomorrow*, Lev Rosen's *Depth*, and Kim Stanley Robinson's *New York 2140*,” *Journal of Modern Literature* 43, no. 2 (Winter 2020): 165–81, <https://doi.org/10.2979/jmodelite.43.2.10>.

617Anna Kornbluh, “Climate Realism, Capitalist and Otherwise,” *Mediations: Journal of the Marxist Literary Group* 33, no. 1-2: Realism Reevaluated (Fall 2019/Spring 2020): 99–118.

618Chiara Xausa, “Decolonizing the Anthropocene: ‘Slow Violence’ and Indigenous Resistance in Cherie Dimaline's *The Marrow Thieves*,” *Il Tolomeo* 22 (December 2020): 87–100, <https://doi.org/10.30687/Tol/2499-5975/2020/01/022>; Sandra Cox, “Decolonial Speculative Fiction: Indigenous Resistance in *The Marrow Thieves*, *Trail of Lightning* and *Storm of Locusts*,” *Journal of Science Fiction* 5, no. 1 (May 2021): 65–79; Petra Fachinger, “Anishinaabemowin in *Indianland*, *The Marrow Thieves*, and *Crow Winter* as a Key to Cultural and Political Resistance,” *Studies in Canadian Literature* 46, no. 2 (August 2022): 127–49,

movements of Indigenous peoples and people of color have used speculative world-building to intervene in international policymaking on climate, as well as pursue local struggles to preserve water and prevent environmental damage.<sup>619</sup> To insist on “BIPOC (Black, Indigenous, and People of Color) futurisms” is to refuse end-of-the-world narratives that center concerns of dominant groups and foreclose paths to more just futures.<sup>620</sup> Studying climate fiction is a way to interrogate power relations animating today's North American archives field, its imaginaries, and practices.

Together, the seven novels in this study offer a speculative periodization of how climate emergency might unfold. The *Southern Reach Trilogy* by Jeff VanderMeer – consisting of the novels *Annihilation*, *Authority*, and *Acceptance* – depicts how Earth's climate alters as the flora, fauna, and physics of another planet interpenetrate it via a geographical zone called Area X.<sup>621</sup> The trilogy illustrates reactions to a rapidly changing environment, by teams of scientists studying it and bureaucrats who administer the scientific expeditions. In *Future Home of the Living God* by Louise Erdrich, drastic changes in the climate are normal, but an all-encompassing social breakdown results from a sudden genetic disruption that seems to reverse evolution across all living beings.<sup>622</sup> Political polarization, violence, authoritarianism, and resistance characterize this stage of climate emergency. Cherie Dimaline's novel *The Marrow Thieves* follows a Métis teenager searching for his family. He forms kinship bonds with other Indigenous travelers seeking safety and clean water, now rare due to intracontinental Water Wars.<sup>623</sup> The title refers to a grisly extractive practice: removing the dreams from Native people's

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<https://doi.org/10.7202/1091105ar>.

619Streeby, *Imagining the Future*.

620Audra Mitchell and Aadita Chaudhury, “Worlding beyond 'the' 'End' of 'the World': White Apocalyptic Visions and BIPOC Futurisms,” *International Relations* 34, no. 3 (September 2020): 310.

621Jeff VanderMeer, *Acceptance* (New York: Farrar, Straus and Giroux, 2014); Jeff VanderMeer, *Annihilation* (New York: Farrar, Straus and Giroux, 2014); Jeff VanderMeer, *Authority* (New York: Farrar, Straus and Giroux, 2014).

622Louise Erdrich, *Future Home of the Living God: A Novel*, First Harper Perennial olive edition (New York: Harper Perennial, 2020).

623Cherie Dimaline, *The Marrow Thieves* (Toronto, ON: DCB, 2017).

bone marrow, as a cure for the malaise affecting mainstream society. *New York 2140* by Kim Stanley Robinson spins out the impacts of sea level rise on coastal cities, as fifty feet of ocean and two massive deluges leave large areas of Lower Manhattan underwater.<sup>624</sup> Communal residents of this “drowned zone” organize to protect their livelihoods from predatory finance capitalists. *The Tiger Flu* by Larissa Lai opens in 2165, in the aftermath of multiple seawall failures on the West coast of North America, and during a fourth wave of the titular pandemic.<sup>625</sup> Fossil fuels are long gone in this Time After Oil, but hyper-concentration of wealth remains. Lai's main characters are the descendants of clone laborers who escaped factory captivity to build new communities in the margins, and on their own terms.

The heart of each novel is a community struggling with rapid change and developing strategies for the world that comes next. Returning to Fortun's concept of “enunciatory communities,” these dynamic advocacy networks coalesce around and develop creative responses to paradoxical double binds. Characters' differences and conflicts bind them to one another as much as they come together through shared material conditions. Their complicated relationships oscillate between modes like kinship, cooperative living, and interdisciplinary science. They establish survival as the stakes for their actions, seeking a good life not in thrall to extractive capitalism. As acute crisis events punctuate the slow violence of climate fiction worlds, characters respond with a kinetic array of archives, records, memory, and knowledge practices, each “a performance of ethics in anticipation of the future.”<sup>626</sup>

Throughout the chapter, I draw lessons from the texts for archival workers contributing to climate response. I conclude by revisiting the theoretical concepts of slow violence, double

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<sup>624</sup>Kim Stanley Robinson, *New York 2140* (New York: Orbit, 2017).

<sup>625</sup>Larissa Lai, *The Tiger Flu* (Vancouver: Arsenal Pulp Press, 2018).

<sup>626</sup>Fortun, *Advocacy After Bhopal*, 16.

binds, and enunciatory communities, and the future-oriented practices that can inform archival workers' organizing for climate action.

## 4.2. Changes in the land: relationships of precarity

In climate fiction, knowledge of the land's past informs how people adapt to meet the needs of present and future. A changing climate forces collectives and individuals to alter how they relate to the land they occupy. Entire sectors of society come to assess risk and habitability differently, as new precarities emerge in landscapes. For example, *New York 2140* describes how permanent sea level rise practically inverts understandings of useful and valuable land:

There existed now a very long strip of newly useless but still strategic shallows, all over the world. No one could do much in this strip in the immediate aftermath, except get away from it, then get shipping ports operational again.<sup>627</sup>

From these “strategic shallows,” the “intertidal” emerges as a new part of the city that gives rise to new social structures:

Ah yes the intertidal, zone of uncertainty and doubt, space of risk and reward, the seashore that belonged to the unorganized public. Extension of the ocean, every building a grounded ship hoping not to break up.<sup>628</sup>

Transforming land use and power relations produces corresponding shifts in the relative weights of property, profit, life, and land.<sup>629</sup> *Marrow Thieves* describes water wars that expand upon conflicts already under way in North America.<sup>630</sup> The frame story of the novel is how

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<sup>627</sup>Robinson, *New York 2140*, 209.

<sup>628</sup>Robinson, *New York 2140*, 126.

<sup>629</sup>Precarious life in the intertidal reflects real-life instances of contingent living and vulnerability to storm surges and flood. For example, Zaman describes poor settlers and migrants in Bangladesh occupying “newly formed islands or *chars* along the coastline,” lacking other options for farming. These low-lying areas are dangerous thanks to erosion, floods, and cyclones. Mohammad Q. Zaman, “Vulnerability, Disaster, and Survival in Bangladesh: Three Case Studies,” in *The Angry Earth: Disaster in Anthropological Perspective*, ed. Anthony Oliver-Smith and Susanna M. Hoffman (New York: Routledge, 1999), 207.

<sup>630</sup>Nick Estes, *Our History Is the Future: Standing Rock versus the Dakota Access Pipeline, and the Long Tradition of Indigenous Resistance* (London: Verso, 2019).

rapacious corporations and governments seek Native lands to plunder for water after destroying all other watersheds:

“Then the wars for the water came. America reached up and started sipping on our lakes with a great metal straw. And where were the freshest lakes and the cleanest rivers? On our lands, of course.”<sup>631</sup>

In other words, climate crisis practically punishes first peoples for their environmental stewardship, by making their land and water attractive to extractive industries and increasingly desperate neighbors. These violations are colonial and capitalist: allowing private industries to trash some of the most important bodies of water on the continent is both land theft and the ultimate damage to the commons.<sup>632</sup> Most of the novels in this study deal with instances of enclosure that limits the movement of peoples and their access to land-based practices: immobility as slow violence.<sup>633</sup>

In these ways, economic and environmental precarity characterize the material circumstances shaping social relationships.<sup>634</sup> Robinson sketches out newly precarious parts of the city:

As always, each neighborhood was a little world, with a particular character. Some of them looked fine, others were bedraggled, still others abandoned. It wasn't always clear why any given neighborhood should look the way it did. Things happened, a building held or fell down, its surroundings followed. Very contingent, very volatile, very high risk.<sup>635</sup>

This vignette underscores the contingency that suffuses life in late capitalism and climate emergency, the seeming arbitrariness of what can happen. As adaptations to climate change

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631 Dimaline, *Marrow Thieves*, 24.

632 Leanne Betasamosake Simpson, *As We Have Always Done: Indigenous Freedom Through Radical Resistance* (Minneapolis, MN: University of Minnesota Press, 2017); Christina Turner, “Water as Wahkohtowin in Cherie Dimaline’s *The Marrow Thieves*,” *Studies in American Indian Literatures* 33, no. 3–4 (Fall-Winter 2021): 98–124, <https://doi.org/10.1353/ail.2021.0011>.

633 In the context of Indigenous peoples’ experiences, Whyte theorizes this enclosure as “industrial settler containment.” Kyle Powys Whyte, “Our Ancestors’ Dystopia Now: Indigenous Conservation and the Anthropocene,” in *The Routledge Companion to the Environmental Humanities*, ed. Ursula K. Heise, John Christensen, and Michelle Niemann (London: Routledge, 2017), 209.

634 Yazell, “Finding Time.”

635 Robinson, *New York 2140*, 280.

produce new relationships to land, certain social structures become obsolete. In *New York 2140*, the intertidal emerges as a literally (and littorally) unstable zone that challenges categories like legal status, ownership, and appropriate use. Can people live there? Maybe, if they abandon hope of security. Can finance capitalists speculate on it? Clearly yes.<sup>636</sup> A number of records-related questions come to mind: What will flooding like this mean for records laws, for example rules that assume the existence of an agency or archives on specific land? What becomes of jurisdictions for local agencies, even entire governments, should the locality disappear?<sup>637</sup>

Climate fiction shows that, as the changing climate alters the physical and social structures of places, this won't necessarily lead individuals to engage further with the places they occupy, with history, or with one another in community. For instance, in *Marrow Thieves*, each character shares a "coming-to" story describing how they joined the chosen family at the book's center. Each person has lived through social disintegration, driven by changes in the environment, to make it this far.

Archives and records are among the social structures that mediate between conflicting understandings of what land is for and how to use it.<sup>638</sup> As changing land-relationships alter the social relationships from which archives draw power and relevance, what uses will archives serve? When land-relationships are untenable, as in these works of climate fiction, what will happen to archives should the land-relationships collapse? One path ahead for archival workers is to take an active role in climate adaptation in areas that affect them. It's clear that serious

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<sup>636</sup>Ortiz, "Financialization."

<sup>637</sup>Gordon-Clark and Shurville, "To Take up Arms"; Gordon-Clark, "Paradise Lost?"

<sup>638</sup>There's almost too much evidence for this simple statement but the following illustrate a range of examples from the literature on archives and climate (also discussed in chapter 3): McLoughlin, "Environmental History"; Wareham, "From Explorers to Evangelists"; Johnston, "Reparations for Dam Displaced Communities?"; Delaney, "An Inconvenient Truth?"; Salvatore, "Lest They Be Forgotten"; Schellnack-Kelly and Jiyane, "Tackling Environmental Issues"; Beredo, *Import of the Archive*; Corbiere, "Audio of Text"; Powell, "Role of Indigenous Communities"; Walshe and Foley, "Learning from the Archives"; Garinger, "Flora and *Fonds*"; Ghaddar, "Total Archives"; Ghaddar, "Provenance in Place"; Castron, "Colonialism, Computerized."

political work will be necessary to learn how to live during and after climate crisis. There may be a role for archivists within that work, as we'll see later in this chapter, but the process is daunting. Things are just as likely to fall apart.

### 4.3. Slow violence: settler society responds to climate change

Several of the books I analyze here center the perspectives and experiences of those who are marginal or oppressed within their dominant society. *Future Home*, *Marrow Thieves*, and *Tiger Flu* in particular put these experiences and advocacy front and center. For many, crisis is an ordinary condition.<sup>639</sup> Everyday acts of exclusion, erasure, and despair can work against the potential for kinship, care, and trust among marginalized people. These are forms of slow violence in which social ties disintegrate at every level. When acute disasters occur, it's not the events themselves that change characters' behaviors; rather, they are responding to the altered conditions of living.

As these novels speculate, patterns in North American history will echo and recur amid a changing climate. By occupying territory, settlers continue to open the way for resource extraction and polluting industries. And in these extrapolated futures, labor exploitation continues to determine racial hierarchies of humanness. The power and logics of capital persist into the next sociopolitical order to emerge from climate instability. In *New York 2140* and *Tiger Flu*, this means that finance capitalists and massive conglomerates dominate geopolitics and control information infrastructures, while conditions on the ground disintegrate. In *Marrow Thieves* and *Future Home*, the “new order” partners capitalism with theocracy – a return to the

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639Raphael Kabo, “Life! Life! Life!: The Precarious Utopianism of Kim Stanley Robinson's *New York 2140*,” *Utopian Studies* 32, no. 2 (August 2021): 252–76, <https://doi.org/10.5325/utopianstudies.32.2.0252>.

past given close associations between traders, explorer-scientists, missionaries, and settlers in North American state-building.<sup>640</sup>

The persistence of capitalist exploitation produces a widespread incapacity to care for fellow beings and shared environments. For instance, *Tiger Flu* depicts multinational corporations that carry on the grim work of maintaining captive labor forces, crushing resistance, and persecuting escapees from their factories. The traumatized descendants of those fugitive workers – clones who call themselves Grist or Grist sisters – come to draw stark lines around whose pain matters and who to include in relationships of care. Grist sisters are avowedly non-human, rejecting violent humanization into a “racially hierarchized universal humanity.”<sup>641</sup> Memories of past harm lead one Grist character to deny any ethical responsibility to humans (“they” and “it”):

“You yourself told me the stories—of how they rounded our grandmothers up by the thousands, lined them up along a barbed wire fence, and shot them. And didn't they discover, raid, and torch our forget-me-do fields just last year? Why should you care if I hurt it or not?”<sup>642</sup>

Each book charts the interpersonal and psychological sides of society-wide collapse. Those living through crises find that they are, act, or feel powerless to make sense of what's happening, much less change the course of events. As several critics note, Erdrich heightens the mood of disorientation in *Future Home* by limiting expository detail about the catalyzing crisis.<sup>643</sup> It's never quite clear what's happening. In each novel, environmental change damages people's

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640Delaney, “An Inconvenient Truth?”; Beredo, *Import of the Archive*; Parak, *Photographs of Environmental Phenomena*; Ghaddar, “*Total Archives*”; Garinger, “*Flora and Fonds*”; Castron, “Colonialism, Computerized.”

641Zakiyyah Iman Jackson, *Becoming Human: Matter and Meaning in an Antiracist World* (New York: New York University Press, 2020), 18.

642Lai, *Tiger Flu*, 45.

643Silvia Martínez-Falquina, “Louise Erdrich's *Future Home of the Living God*: Uncertainty, Proleptic Mourning and Relationality in Native Dystopia,” *ATLANTIS: Journal of the Spanish Association of Anglo-American Studies* 41, no. 2 (December 2019): 161–78, <https://doi.org/10.28914/Atlantis-2019-41.2.08>; Kyle Bladow, “‘The Future That Haunts Us Now’: Oblique Cli-Fi and Indigenous Futurity,” *Transmotion* 7, no. 2: Indigeneity and the Anthropocene (December 20, 2021): 130–50, <https://doi.org/10.22024/UniKent/03/tm.986>; Anna Kembal, “Biocolonial Pregnancies: Louise Erdrich's *Future Home of the Living God*,” *Medical Humanities* 48, no. 2 (June 2022): 159–68, <https://doi.org/10.1136/medhum-2021-012250>.

health while exposing the moral degradation at the heart of capitalism and the so-called good life it affords. In *Tiger Flu*, super-rich elites' anxieties, rivalries, and obsessions with particular technologies are driving forces in environmental and social collapse. In other books, the energy and innovation of bourgeois society and its institutions prove inadequate to sustaining or transforming society, amid the ecological devastation resulting from those revolutionary acts. In particular, *Authority* and *Acceptance* show technocratic institutions falling apart in a crisis. Many readers of VanderMeer's trilogy have noted the failure of epistemology that typifies how many characters struggle with Area X.<sup>644</sup> Most of these bureaucrats and technical workers – not so different in class position from archivists and records managers – struggle with the disorienting effects of not being able to measure, study, or contain the ongoing changes. And in *Marrow Thieves*, the deterioration of middle-class suburbanites shows the impacts of changing climate upon comfortable members of affluent societies:

“And now the sun was gone for weeks at a time. The suburban structure of their lives had been upended. And so they got sicker, this time in the head. They stopped dreaming. And a man without dreams is just a meaty machine with a broken gauge. People lost their minds, killing themselves and others and, even worse for the new order, refusing to work at all.”<sup>645</sup>

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644Kate Schapira, *Time to Be Something Other Than Human: On Attention, Transformation, and Jeff VanderMeer's Southern Reach Trilogy*, Groundloop 98 (Buffalo, NY: Essay Press, 2018); Kristen Figgins, “‘The Integrity of Nature’: A Comparative Analysis of Environmental Anxieties in the Fictions of H.P. Lovecraft and Jeff VanderMeer,” in *Fiction and the Sixth Mass Extinction: Narrative in an Era of Loss*, ed. Jonathan Elmore (Lanham, MD: Lexington Books, 2020), 49–66; Andrew Strombeck, “Inhuman Writing in Jeff VanderMeer's Southern Reach Trilogy,” *Textual Practice* 34, no. 8 (2020): 1365–82, <https://doi.org/10.1080/0950236X.2019.1583684>; Lara Choksey, *Narrative in the Age of the Genome: Genetic Worlds*, Explorations in Science and Literature (London: Bloomsbury Academic, 2021); Louise Economides and Laura Shackelford, “Introduction: Weird Ecology: VanderMeer's Anthropocene Fiction,” in *Surreal Entanglements: Essays on Jeff VanderMeer's Fiction*, ed. Louise Economides and Laura Shackelford (New York: Routledge, 2021), 1–26; Laura Shackelford, “Strange Matters: More-than-Human Entanglements and Topological Spacetimes,” in *Surreal Entanglements: Essays on Jeff VanderMeer's Fiction*, ed. Louise Economides and Laura Shackelford (New York: Routledge, 2021), 124–46; Jackson Jesse Nash, “‘I Am Not Returning Home’: A Transgender Reading of Jeff VanderMeer's *Annihilation*,” *Critique: Studies in Contemporary Fiction* 63, no. 2 (2022): 247–56, <https://doi.org/10.1080/00111619.2021.1961672>.

645Dimaline, *Marrow Thieves*, 88.

While most society-wide climate responses in these books are disastrous, *New York 2140* suggests that even successful adaptations can be socially and psychologically destabilizing. There may come a time when the limits of human ability to normalize climate conditions, and the steps needed to adapt to them, can't stretch any further. It can be hard to adjust to ordinary life in the aftermath of massive changes in the environment, or between massive changes, especially when the response involves extreme new organizations of space:

“When they closed the wall, my dad would take me down to the path running along its top at Thirty-third. Sometimes the Hudson would be raging, whitecaps all over it. And the water would get so high we could see that the river was higher than the city. You could lose your balance if you looked at both sides at once. It kind of made you sick to your stomach. Because the water was higher than the land. You couldn't believe it. People would get the staggers and laugh, or cry.”<sup>646</sup>

Throughout the climate fiction novels I studied, individual and collective grief provide characters with a kind of anchor amid the precarity. For example, some critics have interpreted *Future Home* as an expression of anticipatory grief, heralding a good death for the known world and human species.<sup>647</sup> Similarly, Winn has repeatedly called for archival workers to embrace rather than shy away from grief amid rapid change.<sup>648</sup>

This discussion suggests several possible elements of archival climate response. First, although one effect of archives as institutions is to manufacture consent and reproduce hegemony, it may also be possible to do work within such institutions that illuminates rather than conceals how societies works.<sup>649</sup> Second, archival organizations and workers will probably

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<sup>646</sup>Robinson, *New York 2140*, 161.

<sup>647</sup>Martínez-Falquina, “Louise Erdrich's *Future Home*”; Bridgette Barclay, “My Heart Slowly Cracks’: Making Kin and Living through Extinction in Erdrich's *Future Home of the Living God*,” in *Fiction and the Sixth Mass Extinction: Narrative in an Era of Loss*, ed. Jonathan Elmore (Lanham, MD: Lexington Books, 2020), 67–86.

<sup>648</sup>Winn's portrait of anticipatory grief and palliative care for archives is a popular entry point for workers and students to begin thinking about archives and climate change. Winn, “Dying Well.”

<sup>649</sup>Although scholarship about archives has associated archives with power and hegemony for decades, this was neither a plainly stated or widely accepted claim in the archives field until early this century. In a 2002 paper, for example, Schwartz and Cook caution of “the on-going denial by archivists of their power over memory, the failure to explore the many factors that profoundly affect records before they come to the archives, and the continued assumptions by many users of archives that the records presented to them are not problematic.” If

suffer from climate-related social instability, and must take this likelihood seriously. They may prove useful as a kind of social glue, or a bridge from disaster recovery into longer-term responses. Still, archival contributions to climate adaptation can only go so far as archival imaginaries and material conditions allow.

#### 4.4. Records that constrain: unreliable, missing, enclosed

Climate fiction illustrates how record keeping can constrain or enable, depending on the context. For some characters, records are affective objects to which they attribute feelings like doubt, suspicion, paranoia, and alienation.<sup>650</sup> They struggle to find meaning in records for which they lack context, and to document that which resists documentation.<sup>651</sup> For example, characters in the *Southern Reach* books repeatedly encounter records that aren't what they seem to be, or fail to find the evidence they expect. Records' contents and materiality change in the acts of recording, observing, and using them:

When they looked away from the microscope, the samples change, and when they stared again, what they looked at had reconstituted itself to appear normal.<sup>652</sup>

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more archival workers and students are now commonly and easily able to state that archives aren't neutral, analyzing how power moves in and through archival practices isn't necessarily part of everyday working life. Archival discourses furthermore demonstrate a somewhat confused and obfuscating relationship to power, as Drake observes: "Power occupies prime real estate in the anxieties of archivists and those writing about their work. The tone of these tomes adheres to a similar arc: archives directly impact the production of historical knowledge and thus facilitate forgetting and remembering in service to the state. The ethical archivist, it is often argued, does not shirk this power but rather assumes it consciously and conscientiously, a wiser wielder of their force, so to say, as evidenced by the conspicuously outsized number of references to Star Wars in this genre of writing. It is possible to survey the 'power' discourse within the archival literature and conclude that archivists are simultaneously the most empowered and disempowered professionals in history. Everything, yet nothing, arises from archives." Joan M. Schwartz and Terry Cook, "Archives, Records, and Power: The Making of Modern Memory," *Archival Science* 2 (2002): 2; Jarrett Drake, "Blood at the Root," *Journal of Contemporary Archival Studies* 8, no. 1 (2021): 2.

650 Ahmed theorizes that emotions (she uses the term interchangeably with affects) "create the very effect of the surfaces and boundaries that allow us to distinguish an inside and an outside in the first place." Affects don't themselves move around, instead moving via circulation of "affective objects": bodies and ideas to which people form attachments and attribute the causes of feeling. Sara Ahmed, *The Cultural Politics of Emotion* (New York: Routledge, 2004), 10.

651 Schapira, *Time to Be Something*; Strombeck, "Inhuman Writing."

652 VanderMeer, *Authority*, 125.

Another thought came to me too late to test: that, having absorbed the organism's spores, I was causing a reaction in the sample.<sup>653</sup>

These lines show characters beginning to see themselves not as remote observers, but as active parties in the apparatus that makes a record exist in a certain way, under particular circumstances.<sup>654</sup> It's impossible to organize, classify, or interpret without being affected by that which you're organizing, classifying, or interpreting. Amid much discourse on how archivists shape (the) record(s), examinations of how archives and records shape *archivists* has been less prominent but coalesces around topics like secondary trauma, archival working conditions, and desire in the archives. In the literature on archives, records, and climate change, Stuchel's study of archivists decaying alongside the archives is a rare examination of how the materiality of records affects those who care for them.<sup>655</sup>

Often, the apparatus for making records is insufficient to capture the phenomenon at hand. In one affectively dense example, the protagonist of *Annihilation* (a biologist) encounters numerous unclassifiable phenomena during an exploratory mission to Area X. Living beings in Area X often blur between human, animal, and plant; they communicate in modes that go beyond human language. Here, the biologist describes how an inscription made of plants resists classification within scientific parameters:

The sense of unease in ignoring the ominous quality of those words was palpable. It infected our own sentences when we spoke as we tried to catalogue the biological reality of what we were both seeing.<sup>656</sup>

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653 VanderMeer, *Annihilation*, 72.

654 In the context of technoscience, Barad characterizes this inescapable involvement as “intra-activity.” Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007).

655 Stuchel, “Material Provocations.”

656 VanderMeer, *Annihilation*, 47.

Unstable records in the *Southern Reach* trilogy show how changing environments unsettle expert sense-making. Those who make and use records face a double bind: asserting authority while also accepting unreliability.

Records that don't exist or can't be found nonetheless influence lives. When records go missing in climate disasters, it becomes even more difficult for displaced people to navigate the long aftermath.<sup>657</sup> This less a matter of symbolic representation in archives, than of material consequences for not having papers in an international order where papers afford legitimacy and protection. In fact, more than a decade of debate has yet to settle the question of climate refugee status under international law.<sup>658</sup> In *New York 2140*, the impact of missing records opens one city worker's eyes to what she considers the negative leveling effects of ongoing climate disaster:

Americans were supposed to have citizens' rights that made them impervious to the kind of discrimination that foreigners faced when moving into the city, but in practice this could fail. Lots of people were simply without papers or any cloud documentation; it was hard to believe until you met them by the hundreds and eventually the thousands; day after day for years.<sup>659</sup>

Robinson's character (Charlotte) takes for granted that record keeping regimes should afford different outcomes for “American” “citizens” and “foreigners”; to her, the problem is that the correct records aren't available to help distribute outcomes accordingly. Although Charlotte interprets the situation as leveling, research on disaster impacts in “first world” communities demonstrates that “people's capacity to avoid, cope with, and recover from disasters” depends

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657Several of the many case studies on environmental disaster, archives, and records describe creative approaches to help locate, replace, or provide alternatives to missing documentation. See for example: Dearstyne, “Taking Charge”; Shiraiwa, “Rescuing Tsunami-Damaged Photographs”; Dickerson, “Recovering from Hurricane Sandy”; Aoki, “Collection Development.”

658Jane McAdam, ed., *Climate Change and Displacement: Multidisciplinary Perspectives* (Portland, OR: Hart Publishing, 2010); United Nations Special Rapporteur on the human rights of migrants, “Report on the Impact of Climate Change and the Protection of the Human Rights of Migrants” (Geneva, Switzerland: Office of the United Nations High Commissioner for Human Rights (OHCHR), July 19, 2022), <https://daccess-ods.un.org/access.nsf/Get?OpenAgent&DS=A/77/189&Lang=E>.

659Robinson, *New York 2140*, 222.

upon already-existing vectors of unequal resource and risk allocation.<sup>660</sup> Elements of this “socially produced” vulnerability include class, gender, race/ethnicity, age, language and literacy, migration/residency, and political ideologies.<sup>661</sup> So while Charlotte may see an undifferentiated mass of people without vital records passing through her office, circumstances and outcomes within the group are far more likely to vary along pre-existing lines of social safety.

Missing records can serve powerful interests as much as they create problems for those in crisis. In the *Southern Reach Trilogy* and *Tiger Flu*, centralized, elite control of information infrastructures lies at the root of slow violence affecting the protagonists. In VanderMeer's novels, the Southern Reach (SR) is a government agency studying troubling changes in the environment. High-level officials within SR and its supervising agency (“Central”) hide their failure to understand the changes, by choosing not to create certain records. Furthermore, budget cuts lead to dwindling agency staff, resulting in little records maintenance. These two forms of neglect effectively hide both extant records and the non-creation of records – outcomes with real-life parallels in environmental records and regulation.<sup>662</sup> *Tiger Flu* too depicts worsening information enclosures in response to the changing environment. Two conglomerates monopolize computing/network infrastructure (HöST) and cloning technology (Jemini), each corporation holding “vast powers over the citizenry” and in planetary geopolitics.<sup>663</sup> The family behind HöST owns two moon-sized satellites (Chang and Eng), mainframe computers launched into space to escape the threat of rising oceans. Such dire concentration of information about the past impairs people's ability to respond to crisis, rebuild in the aftermath, and adapt to what comes next:

660Robert Bolin and Lois Stanford, “Constructing Vulnerability in the First World: The Northridge Earthquake in Southern California, 1994,” in *The Angry Earth: Disaster in Anthropological Perspective*, ed. Anthony Oliver-Smith and Susanna M. Hoffman (New York: Routledge, 1999), 90.

661Bolin and Stanford, “Constructing Vulnerability,” 90.

662See for example: “Records Management in the Environmental Protection Agency”; Lamdan, “Sunshine for Sale”; Asogwa and Ezema, “Freedom of Access”; Lamdan, “Beyond FOIA”; Tansey, “Regulation Requires Records”; Tansey, “Regulatory Record-keeping.”

663Lai, *Tiger Flu*, 24.

*Can you imagine? Not knowing your own nature? But it was a time of information blackout. Everything they knew in the time before was stuck on Chang and Eng, and only the elites had access. Even now, our wisest Grist scholars don't know everything they knew.*<sup>664</sup>

Another significant information store in *Tiger Flu*, the New Origins Archive (NOA), is a “gorgeous conservatory of seeds, spores, and cells from which new life could spring and make the world anew.”<sup>665</sup> NOA claims to be a repository of all life prior to the end of oil, but is as incomplete as any archives. Echoing the colonial-imperial taxonomic projects behind today's archives and herbaria, NOA proves to be a tool for ruling elites to encode their values and interests in an ostensibly universal memory of the time before.<sup>666</sup> The power to restore life from its “blueprints” appeals to conglomerate scions, who use its collections for grand, unethical schemes. Like today's tech billionaires, they maintain vanity projects under rhetorical cover of saving civilization through technology – with disastrous consequences.<sup>667</sup>

Several possible contributions to climate action in the archives field emerge from this discussion. Close attention to working conditions, including how archives and records affect archival workers, should inform any climate response. Archival workers must take archival absences seriously – again, not solely in terms of symbolic representation but also regarding the material consequences of missing records. Finally, climate response should fight against information enclosures and neo-colonial, neo-imperial information projects, at any and all levels of intervention that are possible for archivists.

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664Lai, *Tiger Flu*, 328.

665Lai, *Tiger Flu*, 267.

666Garinger, “Flora and *Fonds*”; Ghaddar, “*Total Archives*.”

667For contemporary archival projects along these lines, see Hogan and Roberts, “Archiving for Extinction.”

#### 4.5. Against documentation: tactics from below

Everyday people respond to the constraints of record keeping by improvising practices to survive in the short term, sometimes compromising a sense of longer-term possibility. Many such practices occupy the aftermath of disaster. In *Future Home*, for example, different social formations emerge from a crisis: violent disciplinary controls from above, as well as decentralized underground networks to smuggle supplies, share information, and protect those at risk. Local networks spring up even as confusion reigns about the precise nature of the disaster:

But he finds right away that the city is adapting, the way all cities do. Although there are endless lines when anything from gas to butter appears, people have quickly organized. There are dates and times for everything to sell and trade, and neighborhood centers for information dispersal. There are already clandestine radio broadcasts and wildcat cable and some sketchy wireless internet connections, even a shadowy television signal.<sup>668</sup>

Dynamic systems and groups form and re-form in response to environmental and social disasters.<sup>669</sup> Individuals may align into factions or hyperlocal networks out of fear and uncertainty – as Erdrich describes – or in a spirit of mutual aid and collective survival. In fact, post-disaster mutual aid can work in tandem with community-based archiving.<sup>670</sup> Within these networks, people deploy tactics from below, like misdirecting attention with record keeping. Fake records and knowing the ins and outs of bureaucratic, records-based systems can be crucial for safety: “They might come after you, so we’ll have to make you a new identity. Luckily, I

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<sup>668</sup>Erdrich, *Future Home*, 104.

<sup>669</sup>Hoffman theorizes a trajectory of group dynamics over the short, medium, and long timescales of disaster's aftermath, with particular attention to events whose impacts vary across the affected community. For example, in the “effort to regather and reconstruct their lives,” those who identify as survivors develop “survivor rites” and “recommunalize society” around this newly shared identity. Mutual support and reciprocity reach a high point. Over time, however, fissures appear (or re-appear along traditional lines) between those who experience more and less impact, and within survivor groups. Community members also differ in how they memorialize or try to forget aspects of the disaster. Susanna M. Hoffman, “The Worst of Times, The Best of Times: Toward a Model of Cultural Response to Disaster,” in *The Angry Earth: Disaster in Anthropological Perspective*, ed. Anthony Oliver-Smith and Susanna M. Hoffman (New York: Routledge, 1999), 142-3.

<sup>670</sup>Shiraiwa, “Rescuing Tsunami-Damaged Photographs”; Van Malssen, “Recovering the Collection”; Aoki, “Collection Development”; Vinson, “Applying an Established”; Atkinson, “Tornado Recovery.”

know someone in tribal governance.”<sup>671</sup> In another example, the repressive new regime in *Future Home* disperses millions of tiny drones to expand its surveillance reach. Many drones end up on the reservation where characters take refuge. A tribal leader resists the incursion by swamping distant listeners with unwanted information:

“They like to hang around the tribal offices. Eddy nets them. Puts them in this box with the recordings of the tribal council meetings going back thirty years.” “Ha. I hope somebody really bad is on the listening end. Someone who deserves thirty years of tribal council meetings.”<sup>672</sup>

This many-layered example of longtime passive resistance nods to the restrictive terms of any U.S. government offer to Native tribes and bands. Access to federal funding, land rights, and more have always been contingent on maintaining specific governance structures that meet U.S. government expectations.<sup>673</sup> Recording and retaining three decades of boring meetings is compliance with a vengeance. Casually dismissing the records' value illustrates how irrelevant record keeping is to this tribe's real needs.

For good or ill, documenting and record keeping are tools of social control. Taking archives and records seriously, therefore, can actually mean trying to avoid documentation. Responding specifically to elite control of records, some characters live beyond the reach of record keeping systems that would track and manipulate them from above. Unlike the officials who avoid documentation to preserve their own positions of influence (*Authority, Acceptance*), the main characters in *Marrow Thieves* are a band of fugitives who hide for the sake of their lives. The stakes are different for those operating from below. The dangers of documentation depend on geography. For *Marrow Thieves* fugitives, collapsing infrastructure aids their desire to remain unrecorded: “We were completely off the grid, which worked out perfectly since the power to

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671Erdrich, *Future Home*, 276.

672Erdrich, *Future Home*, 267.

673Vine Deloria, Jr., *Custer Died For Your Sins: An Indian Manifesto* (New York: Avon, 1969).

remote areas had been cut long ago.”<sup>674</sup> For two characters in *New York 2140*, water travel is their main pastime and livelihood – and a major source of risk because they have no official papers:

If they were caught drifting in a traffic lane they could get arrested and their boat impounded. The water police and other people in authority would find out they had no adults responsible for them—no papers—nothing. The various people around Madison Square whom they associated with were not fully aware of their situation, at least not formally, and they might not appreciate being asked for help if Stefan and Roberto were to name them as responsible parties. No, they had to avoid getting stopped.<sup>675</sup>

This vignette shows how the risks of becoming documented-as-undocumented lead people to avoid accepting sorely needed help. Even if having “papers” would legitimize their claims in some contexts, it would also make them more visible to state agencies. *New York 2140* suggests that, more than a century into climate adaptation, every interaction with state agencies will record information about individuals and distinguish between those who do and don't have papers. This is the case today: the more people require services, the more data and records agencies accumulate about them.<sup>676</sup> To become documented to get help or stay undocumented for safety? With this double bind, records regimes complicate care and help-seeking in a crisis.

Destroying records is a normal part of managing archives and records. However, in the climate futures that these authors imagine, destroying or letting go of records can also be acts of resistance to records-based surveillance. In *Annihilation*, the biologist discovers a massive, moldering heap of journals hidden within Area X: the discarded notes of prior scientific expeditions into the territory. Rather than maintaining order, as intended, records are a destabilizing, horror element in the text.<sup>677</sup> This “archive” is a convenient way for the sponsoring

<sup>674</sup>Dimaline, *Marrow Thieves*, 100.

<sup>675</sup>Robinson, *New York 2140*, 59-60.

<sup>676</sup>Among many works on this topic, I've found the following book chapter to be particularly accessible and impactful when teaching workshops on digital archives, for audiences of archival workers: Doug Surtees, “Privacy: A Look at the Disenfranchised,” in *Better Off Forgetting? Essays on Archives, Public Policy and Collective Memory*, ed. Mona Holmlund and Cheryl Avery (Toronto, ON: University of Toronto Press, 2010), 60–70.

<sup>677</sup>Timothy C. Baker, *Writing Animals: Language, Suffering, and Animality in Twenty-First-Century Fiction*

institution (SR) to conceal failed expeditions from official records. Finally, however, characters associated with the expeditions realize what's happening and destroy their own records first: a way to break the cycle and take back agency over what they remember and forget. Here, one character throws away another's painstaking, unique notes onto the pile of journals as a third looks on, appalled at the breach of protocol:

“Well, let me add to the collection,” Grace said, and tossed the biologist's island account and her journal through the open front door. Control stared into that darkness as if she had committed a terrible act that he was thinking of setting right. But Ghost Bird knew that Grace was just trying to set them free.<sup>678</sup>

In this context, proactively destroying records of fear and control feels like a concrete step towards accepting and adapting to change.

Climate fiction extrapolates from historical and present-day politics of archives and records to show how record keeping can constraint or enable, depending on context and power relations encoded in record keeping societies. The unfolding climate emergency demands that archival workers understand the difference: Do archives and records practices limit or expand marginalized people's options for surviving in a crisis? Do these practices enable or resist further information enclosures and social control from above? This exploration of the politics of record keeping suggests several means for archival workers to contribute to climate action. One is minimizing data and records collection in exchange for services, while questioning the need for such exchanges, to chip away at social controls that happen through archives and records practices. Another is to embrace techniques like reappraisal and deaccessioning, to better redirect resources away from mechanisms of oppression, towards practices that support the needs of climate-affected communities.

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(Cham, Switzerland: Palgrave Macmillan, 2019); Amy Clukey, “There Is No South: The Weird Plantationocene of H. P. Lovecraft and Jeff VanderMeer,” in *A History of the Literature of the U.S. South*, ed. Harilaos Stecopoulos (Cambridge: Cambridge University Press, 2021), 376–93.  
<sup>678</sup>VanderMeer, *Acceptance*, 241.

## 4.6. Making records: emergencies and uncertain futures

Having reviewed some of the constraints that persist through archives and records practices, I'll next note ways that keeping records can actually expand one's capacity to act. As discussed above, climate-related disasters displace people, separate them from their vital records, and even destroy the records themselves. In the aftermath, record keeping can help displaced people make claims, return (if possible), or start to build a life elsewhere. They might seek official documentation in order to use services. For example, *New York 2140* imagines a “semi-privatized” city agency helping those who make their way to Lower Manhattan from harshly climate-damaged parts of the city and beyond.<sup>679</sup> Case work at the agency involves creating records for and about the displaced:

Charlotte sat down at a table with them and listened to their stories one by one, creating primary refugee documentation. That would insinuate them into the records, and eventually would serve adequately for them, even if they had no originary paper. It was as if she were plucking them out of the sea itself.<sup>680</sup>

Archivists may be called upon to support, if not directly perform, tasks like tallying names of the missing, accounting for recovery resources, and creating new documentation for displaced people. They may be dispersed in climate emergencies and counted up themselves. The interaction above emphasizes the value of official records and data, not just for their administrative functions but also for the satisfaction Charlotte feels in rescuing people: “plucking them out of the sea itself.” Documenting may feel good to archives and records workers, but here the sense of fulfillment rests upon demeaning already marginalized and displaced people, locking them into a subordinate position relative to the record keeper.<sup>681</sup> How can record keeping instead

<sup>679</sup>Robinson, *New York 2140*, 11.

<sup>680</sup>Robinson, *New York 2140*, 224.

<sup>681</sup>Schlesselman-Tarango's analysis of white women in librarianship is relevant to this scene, as the role of records steward is written in a way that resembles the uplifting, civilizing, charity-giving archetype “Lady Bountiful.” Gina Schlesselman-Tarango, “The Legacy of Lady Bountiful: White Women in the Library,” *Library Trends* 64, no. 4 (Spring 2016): 667–86, <https://doi.org/10.1353/lib.2016.0015>.

help people take an active role in shaping their own lives during and after crisis? Will archival practices continue to treat records as the only real thing about a person, or is there another way? Can archiving and record keeping contribute as forms of what Kornbluh calls the “ordinary work” necessary for just climate futures?<sup>682</sup> All of these may be possible if emergency record keeping would account for what records mean to people, and acknowledge the life-affirming, grounding effects of keeping records for survival.<sup>683</sup>

In the context of climate change, the novels also show how making personal records with a sense of purpose helps people find a place within the changes around them. They may document the present to serve their own needs, or to leave a record of current conditions and decisions. For instance, *Future Home* is an epistolary novel of diary entries that the protagonist (Cedar) addresses to her future child. In a time of heightened surveillance, writing letters and diary entries is a low-tech and therefore relatively safe mode of communication.<sup>684</sup> The diary notes Cedar's attempts to understand changes in environment and society: “There is something I have to do, I think. And the next morning I remember that I have decided to write this—your diary—a record and an inquiry into the strangeness of things.”<sup>685</sup>

Making and keeping records can be an anchor in climate emergency. Cedar and other *Future Home* characters write pages and pages of reflections and observations while also using records-based tactics to avoid surveillance, indicating that they attribute deep meaning to documenting. Record-makers trust that their testimonies will survive into a future, in which enough of the world remains intact that the information can be of use. They can't always assume to know the

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682Kornbluh, “Climate Realism”; Kabo, “Life! Life!”

683For examples of post-disaster record keeping that follows such an ethos, see Shiraiwa, “Rescuing Tsunami-Damaged Photographs,” and Aoki, “Collection Development.”

684Martin Premoli, “Global Anthropocene Fiction and the Politics of Climate Disaster” (PhD, Philadelphia, PA, University of Pennsylvania, 2020), <https://repository.upenn.edu/handle/20.500.14332/31108>.

685Erdrich, *Future Home*, 70.

audience for their archives. For instance, characters in *Acceptance* and *Future Home* aren't sure if their missives to the future are for human or more-than-human use.<sup>686</sup> A double bind for climate fiction's archivists lies between the injunction to witness the present for the future, and the certainty that they don't understand the situation enough to explain it from within. Moreover, characters admit to knowing very little about what will be useful to those who encounter these archives of rapid change.

The meaningfulness of records in climate-affected people's lives indicates several directions for archival workers to engage in climate action. Those who participate in emergency record keeping for a particular community could design those processes around what members of the community decide will best serve their needs. Just as archivists have begun to insist on a role in regional climate planning, these conversations must begin before acute disaster strikes (or slow disasters grow worse). Actions that cultivate community resilience will also support disaster response and climate adaptation. While personal record keeping helps individuals negotiate rapid change and precarious circumstances, a role for archival workers may be to facilitate *collective* community documentation. Such a resource would draw from both individual and shared experiences, make room for dissent, and help the community plan for and adapt to a changing climate together.

#### **4.7. Relations of responsibility: knowledge across generations**

Archival practice is fundamentally relational, from the way finding aids and databases map *fonds* and entities, to the mutual responsibilities between archival workers, records creators, subjects, users, and the larger communities surrounding them.<sup>687</sup> In the context of the changing

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<sup>686</sup>Similarly, as Radio theorizes, records of rapid change must account for the possibility of annihilative events in which the knowledge required to use current records may not survive. Radio, "Documents for the Nonhuman."  
<sup>687</sup>Caswell and Cifor theorize the recognition of these relationships as "radical empathy." Michelle Caswell and

climate, it becomes even more necessary to look beyond memory institutions for the care of knowledge keeping itself, given institutions' histories of exclusion and austerity.<sup>688</sup> This requires understanding the milieu in which knowledge keepers live, how they sustain memory, and how they maintain the methods for doing so. Climate fiction illustrates how archival and memory practices intertwine with relationships of responsibility among beings and environments. In an earlier section, I described characters who produce reams of records to document turbulent times. Others write very little, linking memories to other embodied practices like building, repairing, and healing. Material circumstances always shape knowledge transmission, as in this glimpse of creating traditional objects from what's available:

It was Rose who found the jingles. In a small fold of hide were two dozen rolled tin lids. They weren't smooth and uniform like the jingles we'd seen in old pictures, hung from women's dresses, being danced into grand entries at the old powwows when we were safe to make noise. These were rough around the edges from our camp can opener and stamped with expiry dates and some with company names: Campbell's, Heinz. We passed them around, careful not to slice our fingers on their jagged curves.<sup>689</sup>

Knowledge isn't free-floating; it has appropriate uses.<sup>690</sup> Just as the hierarchical arrangement of records reflects a stratified society, memory practices reinforce particular ways to live.<sup>691</sup> In

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Marika Cifor, "From Human Rights to Feminist Ethics: Radical Empathy in the Archives," *Archivaria* 81 (Spring 2016): 23–43.

688Following adrienne maree brown, Winn proposes an "emergent strategy" for archives and memory keeping, that embraces a plurality of contexts in which archival practices take place. Winn, "Dying Well."

689Dimaline, *Marrow Thieves*, 152.

690As an example of *inappropriate* uses of knowledge, McGregor identifies an "extraction paradigm" that structures how environmental governance bodies attempt to use Indigenous knowledges (IK). Attempts to remix IK are problematic because "Indigenous knowledges are not just floating around untethered to broader Indigenous societal goals and aspirations." The climate fictions in the current study resist this paradigm by illustrating how knowledges arise from and are inseparable from specific contexts. McGregor, "Indigenous Knowledge Systems," 3.

691Knowledge systems are active means of reinforcing particular ontologies, epistemologies, and organizations of a society. For example, Olson's study of library subject classifications demonstrates that, when knowledge systems are incapable of sufficiently representing particular experiences, they reflect and reinforce mechanisms that marginalize those experiences. It's impossible to appropriately represent certain positionalities in the most widely used classification systems; one must split each positionality apart in order to include it. By contrast, Littletree et al. propose a model for Indigenous knowledge organization that centers and builds out from relational practices and consideration of the whole of being. Hope A. Olson, *The Power to Name: Locating the Limits of Subject Representation in Libraries* (Dordrecht, Netherlands: Springer, 2011); Sandra Littletree, Miranda Belarde-Lewis,

*Tiger Flu*, one character scolds another for making ill use of the stories and skills she has shared: “The knowledge I feed you from the time before is solid jade. You have no right to abuse it.”<sup>692</sup> The fault isn't from lack of obeisance to the transmitted knowledge. The error lies in failing to make *appropriate* use of methods that ancestors developed painstakingly within dire resource constraints – or in failing to make the knowledge useful at all, depending on how we break down the word ab-use.

Building on this point, the climate fiction in this study demonstrates a shared ethics of intergenerational responsibility. Young people must care for elders, while elders must carefully introduce youth to knowledge through guiding stories and experiences. Everyone must recognize each other's individual autonomy in order to fulfill these duties across generations. In *Marrow Thieves*, oral transmission of memory, history, and skills (Story) prepares young people to shape collective futures.<sup>693</sup> Tales must be told and retold, heard and heard again, to fully understand.<sup>694</sup>

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and Marisa Duarte, “Centering Relationality: A Conceptual Model to Advance Indigenous Knowledge Organization Practices,” *Knowledge Organization* 47, no. 5 (2020): 410–26, <https://doi.org/10.5771/0943-7444-2020-5-410>.

692Lai, *Tiger Flu*, 45.

693Most scholarship on *Marrow Thieves* is about the centrality of storytelling. See for example: Xausa, “Decolonizing the Anthropocene”; Megan E. Cannella, “Dreams in a Time of Dystopic Colonialism: Cherie Dimaline’s *The Marrow Thieves* and Louise Erdrich’s *Future Home of the Living God*,” in *Displaced: Literature of Indigeneity, Migration, and Trauma*, ed. Kate Rose, Routledge Studies in Contemporary Literature 45 (New York: Routledge, 2020), 111–20; Moritz Ingwerson, “Reclaiming Fossil Ghosts: Indigenous Resistance to Resource Extraction in Works by Warren Cariou, Cherie Dimaline, and Nathan Adler,” *Canadian Literature* 240: Decolonial (Re)Visions of Science Fiction, Fantasy, and Horror (2020): 59–78, <https://doi.org/10.14288/cl.vi240.191977>; Karen Mundy, “The *Binti* Series and *The Marrow Thieves*,” *Comparative Education Review* 64, no. 1 (February 2020): 139–42; Annika Rosanowski, “Saving the Present: Material Feminist Readings of Canadian and U.S. Post-Apocalyptic Fiction of the Twenty-First Century” (PhD, Edmonton, AB, University of Alberta, 2020), <https://doi.org/10.7939/r3-n7qa-kg79>; Patrizia Zanella, “Witnessing Story and Creating Kinship in a New Era of Residential Schools: Cherie Dimaline’s *The Marrow Thieves*,” *Studies in American Indian Literatures* 32, no. 3–4 (Fall-Winter 2020): 176–200, <https://doi.org/10.1353/ail.2020.0023>; Anah-Jayne Samuelson and Vanessa Evans, “‘Real Old-Timey’: Storytelling and the Language of Resurgence in Cherie Dimaline’s *The Marrow Thieves*,” *Studies in the Novel* 54, no. 3 (Fall 2022): 274–92, <https://doi.org/10.1353/sdn.2022.0023>.

694Whyte characterizes this iteration as “the dialogic unfolding of spiraling time.” Similarly, Faulkhead and Thorpe, in conversation with Krebs, reclaim the storytelling term “yarning” to describe a method of researching, sharing knowledge, and building archives among Aboriginal Peoples in Australia: “Perhaps this is our title as well as the concept of an Indigenous archive, a sense of how an archive needs to be – that an archive needs to be a yarning, a conversation, with all the tacit protocols involved in a conversation between people, the respect in engagement that allows a conversation to continue over time, to be returned to, to grow and deepen, within a shared creative space. Yarning implicitly acknowledges the various contributors, embraces their contributions. It is by nature co-

Critics have described this education as a form of Indigenous futurism.<sup>695</sup> Each instance of Story conveys an aspect of the past that helps make sense of the present and strategize for the future:

Miig stood, pacing his Story pace, waving his arms like a slow-motion conductor to place emphasis and tone over us all. We needed to remember Story. It was his job to set the memory in perpetuity. He spoke to us every week. Sometimes Story was focused on one area, like the first residential schools: where they were, what happened there, when they closed. Other times he told a hundred years in one long narrative, blunt and without detail. Sometimes we gathered for an hour so he could explain treaties, and others it was ten minutes to list the earthquakes in the sequence that they occurred, peeling the edging of the continents back like diseased gums. But every week we spoke, because it was imperative that we know. He said it was the only way to make the kinds of changes that were necessary to really survive. “A general has to see the whole field to make good strategy,” he'd explain. “When you're down there fighting, you can't see much past the threat directly in front of you.”<sup>696</sup>

Memory practices are never complete, but rather extend throughout the overlap between lifetimes. In response to slow violence, they provide the equipment for long-term strategizing. Through histories like these, climate fiction invites readers to understand survival as a technologically and morally advanced undertaking, with knowledge and memory at its center.

A key purpose of archival practices in the worlds of climate fiction is to shape change in another direction, rather than enshrining errors of the past. Characters repeatedly ask, *What can we learn from the past about starting anew with what we're given? How will these memories help us get there?*<sup>697</sup> They are constantly improvising beginnings from what remains of the old.

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creative.” Kyle Powys Whyte, “Indigenous Science (Fiction) for the Anthropocene: Ancestral Dystopias and Fantasies of Climate Change Crises,” *Environment and Planning E: Nature and Space* 1, no. 1–2 (2018): 229; Allison B. Krebs, quoted in Shannon Faulkhead and Kirsten Thorpe, “Dedication: Archives and Indigenous Communities,” in *Research in the Archival Multiverse*, ed. Anne J. Gilliland, Sue McKemmish, and Andrew J. Lau (Clayton, Victoria: Monash University Publishing, 2017), 5.

<sup>695</sup>Turner, “Water as Wahkohtowin”; Samuelson and Evans, “Real Old-Timey”; Melissa Horner, Joaquin Muñoz, and Robert Petrone, “Ni Keehtwawmi Mooshahkinitounawn: Lifting Up Representations of Indigenous Education and Futures in *The Marrow Thieves*,” *Research on Diversity in Youth Literature* 4, no. 1: Representations of Education in Youth (October 2021): Article 7.

<sup>696</sup>Dimaline, *Marrow Thieves*, 250.

<sup>697</sup>Maracle theorizes remembering as always serving a path or purpose: “We place our obligations before us when we re-member. To what end do I wish to re-create this moment? What direction do I wish this memory to travel in the future? In so doing we hang on to memories of those things that assist us in conjuring and travelling in the direction charted by the culture that has shaped us. We let go of those things that will impair our journey or thwart the courage required to secure our path. We determine the direction we believe we wish to travel before we speak or make a truckload of decisions. The direction we are travelling shapes our memories whether we are

The novels suggest that the purpose of keeping and caring for memory is to be able to build new structures and practices that meet the world as it's changing. Neither the past nor future are fixed; rather, people constantly call them into being to meet the needs of the present.<sup>698</sup> If there's a role for archival workers in these forms of climate action, it may be to embrace the relational, including conflict, and acknowledge intergenerational responsibility, including within the archives field. Attending to how material conditions interact with knowledge transmission is a guiding principle across these areas of action.

#### **4.8. How to be collective: solidarity, repair, dissent**

From within this framework of relationality, several arguments emerge about how to be collective.<sup>699</sup> One claim is the matter of solidarity as collective safety. In each novel, collective action towards change builds from foundations of already existing cooperatives and communities, many of which have deliberate rules and structures for conduct.<sup>700</sup> The purpose of each group is to leave no one behind. Acts of solidarity can be sudden and dramatic, like risking one's safety to help someone in danger. Sharing this level of risk can be an everyday act, as the narrator of *Future Home* reflects:

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conscious of this or not.” Lee Maracle, *Memory Serves: Oratories*, ed. Smaro Kamboureli (Edmonton, AB: NeWest Press, 2015), 2-3.

698Similarly, Fortun describes post-disaster advocacy as a process of telling and re-telling how events unfolded. Advocates recount what happened differently according to the claims they are trying to make: “Dates and times are a way to query the disaster in concrete terms. They also reveal different understandings of historical development and of the relationship between past and future. People 'tell time' by turning certain events into reference points—investing some things with meaning, while discounting others. Chouhan [a worker advocate] and Union Carbide [a multinational corporation] can thus be differentiated. They tell the times of the disaster differently, setting up the past to configure very different futures.” Fortun, *Advocacy After Bhopal*, 143.

699Groups living cooperatively with deliberate rules and structures in the novels include the Grist sisters and Cordova girls (*Tiger Flu*), a housing cooperative in the former Metropolitan Life Building (*New York 2140*), a found family of Indigenous people who encounter fellow fugitive groups along the way (*Marrow Thieves*), and an extended family who work together to keep a vulnerable member safe (*Future Home*). VanderMeer's trilogy mostly highlights the dissolution of social ties, but *Acceptance* does follow a weird trio of disaster survivors as they shed their previous lives and develop new norms for navigating a strange landscape together.

700This parallels Nzinga's finding that existing enunciatory communities acted as a basis for the emergence of post-Katrina advocacy in New Orleans. Nzinga, “Exit the Matrix.”

I think how surprising people are. Hiro has casually risked his life for me because I am on his mail route. Recycling-truck Shawn, with the tragic brown eyes, is devoting himself to the rescue and hiding of pregnant women. Tia's husband did exactly what they'd agreed, and now they are together.<sup>701</sup>

However, it's also solidarity *not* to allow people to sacrifice themselves when that would deviate from the norms of a group. In a scene from *Marrow Thieves*, for example, one character acts in solidarity by not allowing another member of the group to unilaterally risk his own life:

“No one is more important than anyone else, French.”

It was Miig, still standing a few steps back. “No one should be sacrificed for anyone else.” I tried to laugh it off, shrugging and starting a stream of “no big deal” sentiments, but he refused to allow it. “I'm not joking, boy.”<sup>702</sup>

Self-sacrifice would violate agreements that are meant to keep the whole group safe. Instead, collective safety would benefit more from individuals understanding the limits of their power while acting to the utmost within those limits. As the narrator of *New York 2140* observes, “Nothing to do but take care of your own part of the problem.”<sup>703</sup> Community norms such as memory practices explain how to do this. In *Tiger Flu*, for example, the community of Grist sisters encodes quotidian practices in songs and rituals. Another collective in the novel, the Cordova Dancing School Girls, have a more transactional and improvisational approach to sustaining knowledge over generations. They hustle and scrap to collect useful information wherever they can, heisting and sharing knowledge among the group as actively as they scavenge for food and salvage supplies. For each community, knowledge transmission is inseparable from the resourceful practices of everyday life.

A second claim about collectivity is that repair is essential to survival. For instance, *Tiger Flu* describes how Grist strengthens its ties by rehabilitating harmful memory technologies. The

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701Erdrich, *Future Home*, 243.

702Dimaline, *Marrow Thieves*, 58.

703Robinson, *New York 2140*, 457.

sisters cultivate a substance called “forget-me-do,” which they use to manage what the community remembers and forgets. They propagate the substance through plants native to the Pacific Northwest:

My mother double and I are out harvesting forget-me-do—our most precious crop, bred alongside us three generations ago in the factories of Saltwater City, refined by us here at Grist Village, and now seeded through mallow, agave, and sage. Through its use, we cultivate what we remember and what we forget in order to make Grist history. Under my mother double's watchful eye, I developed my own strain to suit first and foremost the needs of Peristrophe Halliana.<sup>704</sup>

Both Grist and forget-me-do are clones. They first encounter one another as fellow factory products, but the context of their relationship shifts from an extractive mode of reproduction to a method more attuned to the land. Grist uses forget-me-do to remember rituals and songs, and forget pain. They use the latter property to harvest organs from Grist sisters called “starfish,” who are able to re-grow the body parts that ailing sisters receive as transplants. Starfishes' pain is necessary for survival, but must remain unspoken. In this way, acting in the name of community activates conflicting ideas about who constitutes and counts within the community, and between multiple understandings of what would ensure its survival.<sup>705</sup> By the novel's close the sisters shift to a form of reproduction that shares pain, rather than concentrating it among starfish. They reconfigure how they keep memories, now accepting pain and grief without forgetting: “When you pluck your first replacement heart or liver from my branches, don't you dare scoff. You must remember my pain, as I remember yours.”<sup>706</sup> The sisters' decision even further recuperates forget-me-do as a partner in maintaining the community. Ultimately, freedom lies in transforming the terms of their mutual dependence.<sup>707</sup> As this example shows, rehabilitating technologies of

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704Lai, *Tiger Flu*, 43.

705This double bind resembles what Levine theorizes as contradictory commitments to ideas (ideology) and people (solidarity) within social movement organizations. Levine, *South Korean Civil Movement*.

706Lai, *Tiger Flu*, 327.

707Larissa Lai, “Familiarizing Grist Village: Why I Write Speculative Fiction,” *Canadian Literature*, no. 240: Decolonial (Re)Visions of Science Fiction, Fantasy, and Horror (2020): 20–39,

oppression is an ongoing effort over generations. The first step is to understand what the technology enables and reproduces, in order to dismantle its harmful functions. The community can then repurpose its elements to support rather than destroy life. As critics ask of climate fiction, can “technologies of the future” do otherwise than extend colonial logics?<sup>708</sup> Can technologies like archives and records do otherwise?

*Marrow Thieves* also ends on a note of community repair: members of different Indigenous communities come together to reconstruct and regenerate traditional languages and teachings:

The Council spent a lot of time piecing together the few words and images each of us carried: hello and goodbye in Cree, a story about a girl named Sedna whose fingers made all the animals of the North. They wrote what they could, drew pictures, and made the camp recite what was known for sure. It was Bullet's idea to start a youth council, to start passing on the teachings right away, while they were still relearning themselves. Slopper was tasked with putting that together, and he thrived under the responsibility. He even gave them a name: Miigwanang – feathers. We were desperate to craft more keys, to give shape to the kind of Indians who could not be robbed. It was hard, desperate work. We had to be careful we weren't making things up, half remembered, half dreamed.<sup>709</sup>

For climate fiction's stewards of memory, repairing knowledge is a hopeful process. They must be meticulous and rigorous to avoid nostalgia and plot a way forward that best serves the community's needs. The passage above demonstrates the need to involve young people in shaping the future of which they're already living in anticipation. Similarly, it's disingenuous to describe youth as those who will deal with climate change in the future, when they're already doing so now.

Finally, the texts illustrate how differences, as much as shared purposes and norms, are integral to charting a path forward. For example, a member of the found family at the center of

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<https://doi.org/10.14288/cl.vi240.192487>.

708Xausa, “Decolonizing the Anthropocene”; Diana Brydon, “Risk, Mortality, and Memory: The Global Imaginaries of Cherie Dimaline's *The Marrow Thieves*, M.G. Vassangi's *Nostalgia*, and André Alexis's *Fifteen Dogs*,” *Revista Canaria de Estudios Ingleses* 78 (April 2019): 97–112,

<https://doi.org/10.25145/j.recaesin.2019.78.07>.

709Dimaline, *Marrow Thieves*, 214.

*Marrow Thieves* contributes to collective knowledge as much by challenging as by absorbing it: “We were used to her outbursts during Story; in fact, she became part of Story, the dissenting voice to the way things are, the rebel waiting for the fight to be brought.”<sup>710</sup> The family doesn’t marginalize her for dissenting, but instead welcomes and respects her as another teacher. In order to move forward together, the group builds knowledge from everyone’s contributions. Dissent shapes the course of action, and provides a necessary spark for change to happen at all.<sup>711</sup> Fortun identifies this dynamic as a key characteristic of enunciatory communities:

Enunciatory communities are not expected to devolve into benign pluralism. They cannot be aggregated into a harmonious whole. Their differences are considered a resource, rather than a problem. Most important are the discontinuities. Enunciatory communities do not remain the same across time or across space. They are chameleonlike, morphing in response to the interplays in which they find themselves, learning as they go—developing new strategies at every turn.<sup>712</sup>

Climate fiction illustrates the political work necessary to sustain just ways of living together. Most communities in the novels seek positive changes in their lifeworlds, even though the group may fragment in the process. Struggling to find or respect autonomy within collectives is a perpetual, unresolvable, and vital tension among the diverse interests that enunciatory communities hold together. Archival workers may learn from climate fiction’s collectives to organize themselves more effectively, so that everyone can contribute to shared efforts. Challenging (rather than naturalizing) resource scarcity and concentrations of power can strengthen communities in which archival workers participate. Repairing archival technologies from within is another key area for action.

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710Dimaline, *Marrow Thieves*, 32.

711See chapter 5 for a discussion of how dissent and marginality figure in changing the archival field.

712Fortun, *Advocacy After Bhopal*, 14.

#### 4.9. Against slow violence: strategies, tactics, and skills

Whether refusing debt en masse (*New York 2140*), reclaiming traditional land (*Future Home*), or destroying extractive institutions (*Tiger Flu*, *Marrow Thieves*, and *Acceptance*), the organized political actions in these climate novels fight multiple forms of enclosure at an ambitious scale. Those working for change set their sights on redistributing resources for economic justice and reparations. They issue calls for mass movement, build strategies, then work towards a consensus that can lead to action. In some cases, characters develop a concrete strategy to accomplish tangible goals, which they support with current and historical records.

Here's an example from *Future Home*, a community meeting on a tribal reservation:

“Hello, my relatives,” he says. “Every week from now on, we meet, same time and same place. Over the next month you will see this map change. The green parcels can already be colored in—changed directly from green to purple. We have secured state land. The yellow is what we are working on now, and I think we are being reasonable. We're not taking back the whole top half of the state, or Pembina, Ontario, Manitoba, or Michigan, all our ancient stomping grounds. We're just taking back the land within the original boundaries of our original treaty.”<sup>713</sup>

The strategy for reclaiming treaty land involves everyone who lives on or is returning to the reservation. They follow campaign progress through standing meetings, regular updates to a map, and reference to both local knowledge and historical documents. In this way, archives and records act as tools for people to articulate issues and strategies to one another.<sup>714</sup> Elsewhere in the novel, Erdrich lists roles and tasks that the tribal community assigns to members in order to navigate post-crisis circumstances. Although the text doesn't name every role related to taking back land, the strategy probably uses runners (for communication), Ogitchidaag (defenders), and

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<sup>713</sup>Erdrich, *Future Home*, 256.

<sup>714</sup>Similarly, Tansey calls on information workers to actively support political movements that resist petrostates – in other words, going beyond simply providing information by committing skills, time, and effort. Tansey, “What We Don’t Know.”

tribal members with professional skills who are returning from cities (“our returning urban relatives”).<sup>715</sup> The community strengthens its internal structures in the process of pursuing a goal.

Strategies and tactics like this matter to archival practice because the field engages with and contains its own wicked problems, all of which will take massive cooperation at every level to address in a meaningful way.<sup>716</sup> Proposing a dramatic idea, challenging consensus, or changing a hegemonic practice can seem impossible. This may be why public discussions of archives and changes in the climate sometimes individualize the possible actions that archival workers can take.<sup>717</sup> By contrast, *New York 2140* advises against paring big problems into small, manageable ways of thinking or acting. Instead, Robinson suggests, keeping to the grand scale can best communicate the urgency and promise of the idea: “The householders' strike even looked like a logical response to the bashing of the city by Mother Nature and the clueless intransigence of the absent rich in their empty uptown towers. Strike, therefore! and watch the house of cards fall.”<sup>718</sup>

Within campaigns for change, characters deploy versatile tactics and skills to resist slow violence. They share knowledge and resources, jury-rig and sabotage oppressive infrastructures, wait patiently for the right time to act, and build solidarity. There are affective skills for resisting slow violence, too, as in this snapshot from *Tiger Flu*: “Madame taught her how to slide into dread when necessity calls. She settles into the rumbling darkness and prepares for whatever comes.”<sup>719</sup> These skills are more flexible and responsive than the highly structured and self-conscious best practices that often circulate in the archives field. In fact, techniques for resisting slow violence more closely resemble the myriad methods with which archivists actually make

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715Erdrich, *Future Home*, 257.

716Gilliland and Sue McKemmish, “Record-keeping Metadata”; Wilczek, “Archival Engagements”; Tansey, *A Green New Deal for Archives*.

717See for example: Abbey, “The Green Archivist”; Kaufman, “Advocating for Climate Action.”

718Robinson, *New York 2140*, 553.

719Lai, *Tiger Flu*, 272-3.

their way within resource and political constraints – as I discuss in chapters 3 and 5. Archiving with limited capacity can lead to labor exploitation that fills gaps in staffing.<sup>720</sup> But such conditions can also catalyze creative responses to the double binds of slow violence, messier and more hopeful than chasing an impossible efficiency. These are the skills and tactics I hope archival workers can continue to cultivate in times of climate emergency.

As the speculative history of climate change progresses, new formations emerging from disaster's aftermath mature into more fixed ways of living and governing. Climate fictions imagine how such ostensibly stable conditions could in turn give rise to further social, political, and economic upheaval, even if these transformations aren't wholly radical in the details.<sup>721</sup> For

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720Rodriguez et al., “Collective Responsibility”; Karly Wildenhaus, “Wages for Intern Work: Denormalizing Unpaid Positions in Archives and Libraries,” *Journal of Critical Library and Information Studies* 2, no. 2 (2018), <https://doi.org/10.24242/jclis.v2i1.88>; Peter Monaghan, “Are Temporary Appointments a Threat to Archiving?,” *Moving Image Archive News* (blog), February 8, 2019, <http://www.movingimagearchivenews.org/are-temporary-appointments-a-threat-to-archiving/>; Dorothy Berry, “Developing Imagination,” *Collective Responsibility: National Forum on Labor Practices for Grant-Funded Digital Positions* (blog), June 24, 2019, <http://laborforum.diglib.org/2019/06/24/developing-imagination/>; Des Alaniz, “Reflections on Temporary Appointments and Innovation/Diversity Culture in Libraries and Archives,” *Collective Responsibility: National Forum on Labor Practices for Grant-Funded Digital Positions* (blog), August 14, 2019, <http://laborforum.diglib.org/2019/08/14/reflections-on-temporary-appointments-and-innovation-diversity-culture-in-libraries-and-archives/>; Karl Blumenthal et al., “What’s Wrong with Digital Stewardship: Evaluating the Organization of Digital Preservation Programs from Practitioners' Perspectives,” *Journal of Contemporary Archival Studies* 7 (2020): Article 13; Amy Wickner and Ruth Kitchin Tillman, “Let’s Talk About Contingent Labor” (Poster, Code4Lib 2020, Pittsburgh, PA, March 10, 2020), <https://osf.io/w76bt/>; Stephanie Bredbenner et al., “Nothing About It Was Better than a Permanent Job’: Report of the New England Archivists Contingent Employment Study Task Force” (New England Archivists, February 2022), [https://www.newenglandarchivists.org/resources/Documents/Inclusion\\_Diversity/Contingent-Employment-2022-report.pdf](https://www.newenglandarchivists.org/resources/Documents/Inclusion_Diversity/Contingent-Employment-2022-report.pdf); Meg Rinn, “Impermanent Positions, Permanent Losses: How Contingent Employment Impacts Descriptive Work and Makes Us All a Little Worse Off,” *Descriptive Notes* (blog), June 8, 2022, <https://saadescription.wordpress.com/2022/06/08/impermanent-positions-permanent-losses-how-contingent-employment-impacts-descriptive-work-and-makes-us-all-a-little-worse-off/>.

721For example, critics of *New York 2140* observe that its ways of rethinking crisis and recovery place normative forms of kinship too much at the center. This contrasts with the kinship ties emerging in *Annihilation*, *Acceptance*, *Marrow Thieves*, and *Tiger Flu*, which decenter hetero-patriarchy, nuclear families, and genetic ties to make way for other kinds of networks and families. This abundant variety of kinship forms reflects conflicting ideas about relations in archives, as Fellman describes: “Archival systems may abound with metaphors of the nuclear family – in tools such as Archivist’s Toolkit and ArchivesSpace, we find 'sibling,' 'child,' and 'parent' relationships, and we 'spawn' new records from old – but the fact remains that archives are not nuclear families, any more than Russ and Tiptree were. They are protean information, facts that can be rendered in any order. Like the chosen family, they have an infinite number of forms. And their order is always 'chosen.’” Isaac R. Fellman, “Life-Now’: James Tiptree, Joanna Russ, and the Queer Meaning of Archives,” *In the Library With the Lead Pipe*, July 11, 2018, <https://www.inthelibrarywiththeleadpipe.org/2018/life-now/>. For discussions of kinship/relationships in climate fiction, see: Kornbluh, “Climate Realism”; Zanella, “Witnessing Story”; Xausa, “Decolonizing the Anthropocene”; Turner, “Water as Wahkohtowin.”; Marina Klimentenko, “Beyond 'The Last

instance, Kornbluh characterizes *New York 2140* as a vision of what's possible when it's too late to forestall climate crisis or transform economic systems; others consider the book's "revolution" – nationalizing banks, voting progressive candidates into office – too easily accomplished, too neatly and boringly wrapped up.<sup>722</sup> As I'll discuss in the next chapter, several archival workers involved in climate action insist that nothing short of transformation will sustain the practice of archiving. However, they also acknowledge the contradictions inherent in pursuing drastic change to preserve a field of practice. Whether it's too late for archival workers or they find themselves in a kind of endgame, it's worth seeking out concrete examples of the mundane cooperative efforts that any substantive change will require.<sup>723</sup>

Given the global scale of climate challenges, international knowledge organizations like UNESCO and the International Council on Archives (ICA) may currently be in best position to promote climate action across the archives field. However, the history of these organizations shows that they extend colonial, imperial, capitalist hegemony to all areas of knowledge creation worldwide, through the circulation of Western archival norms and structures.<sup>724</sup> As climate fiction critics (among many others) observe, colonialism erases particularity.<sup>725</sup> Archival workers must consider what all this means for any strategy they undertake: How can they organize around a global phenomenon without universalizing (or Westernizing) what's happening and how to

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Doubler: Reproductive Futurism and the Politics of Care in Larissa Lai's *The Tiger Flu*," *Studies in Canadian Literature / Études En Littérature Canadienne* 45, no. 2: Neoliberal Environments (2020): 161–80, <https://doi.org/10.7202/1080278ar>; Shital Pravinchandra, "More than Biological': Cherie Dimaline's *The Marrow Thieves* as Indigenous Counter-genetic Fiction," *Medical Humanities* 47 (2021): 135–44, <https://doi.org/10.1136/medhum-2020-012103>

722Kornbluh, "Climate Realism"; Daniel Aldana Cohen, "It Gets Wetter," *Dissent* 64, no. 3 (Summer 2017): 7–11, <https://doi.org/10.1353/dss.2017.0064>; Everett Hamner, "Angry Optimism: Climate Disaster and Restoration in Kim Stanley Robinson's Alternate Futures," in *The Palgrave Handbook of Twentieth and Twenty-First Century Literature and Science*, ed. Neel Ahuja et al. (Cham, Switzerland: Palgrave Macmillan, 2020), 449–67; Andrew Milner and J. R. Burgmann, *Science Fiction and Climate Change: A Sociological Approach*, Liverpool Science Fiction Texts and Studies 63 (Liverpool: Liverpool University Press, 2020).

723In 2011, Harris characterized the state of the South African "archives for justice" movement as an endgame, due in part to the looming threat of climate change. Harris, "Jacques Derrida Meets Nelson Mandela."

724Ghaddar, "Provenance in Place."

725Cannella, "Dreams in a Time of Dystopic Colonialism"; Kembell, "Biocolonial Pregnancies."

respond? Fortun's use of “double bind” frames this responsibility in terms of “two competing demands: the need to render claims of harm in their particularity and the obligation to articulate the broader, temporally and spatially cross-cutting systems in which those claims are nested.”<sup>726</sup>

In describing problems and developing responses, archival workers will need to negotiate between these demands. Examples of past political organizing – perhaps from archival collections – can help develop an analysis and chart a path forward. Climate fiction offers glimpses of political strategies and tactics that emerge from particular material conditions and deploy practices and skills already familiar to archival workers.

#### **4.10. Conclusion**

Evidence from seven climate fiction novels shows how early-21st-century imaginaries play out the consequences of climate emergency in North America through overlapping forms of slow violence. Changes in the environment produce precarity and harm at every level, from unstable land to the interpersonal and psychological. Within this context, record keeping can constrain or enable the ability to adapt. People may adopt short-term tactics to hide from records-based social controls, or create their own documentation out of both hope for the future and a need to survive. Examples of kinship, solidarity, and intergenerational responsibility throughout the books suggest ways to repair relationships in archival practice. Finally, climate fiction offers lessons on how to act collectively and build skills for resisting slow violence.

The acute emergencies that set each novel in motion have a persistent backdrop of climate change as normal, permanent. Resource extraction leaves behind ruined ecologies and infrastructures. Old colonial methods like road allowances, residential schools, pipelines, and land theft recur in the imagined future, demonstrating that the past is never past. Austerity

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<sup>726</sup>Nading, “Living in a Toxic World,” 211.

measures in government agencies, information enclosure, the financialization of everything, and housing shortages each demonstrate the failures of capitalism coming to fruition. At the level of groups and interpersonal ties, scarcity strains kin relationships, leading to dramatic instances of betrayal and solidarity. Archives and records practices maintain these damaging power relations in many instances, while offering tools for resistance in others.

Double binds, emerging from the conditions of slow violence, move the characters of climate fiction to act. For many, the tools at hand are unequal to explaining the situations in which they find themselves. They must record what's happening to make sense of it, but can't understand it enough to meaningfully document it. Some keep meticulous records to stabilize an uncertain situation, only to find that the records themselves are prime destabilizing agents. Every attempt to understand rapid environmental change operates alongside and through cross-purposes and competing interests. Characters struggle to both trust in the authority of records and also accept being part of an apparatus that constitutes them in a particular form, at a particular moment.

The fugitive and marginalized people who populate these novels must continually make claims on behalf of their right to exist. Each effort brings visibility to the claimants, which in turn heightens the risk of harm.<sup>727</sup> Living in the margins takes detailed insider knowledge to skirt oppressive systems. Climate fiction's memory keepers thus exist within yet another double bind, since both writing things down and practicing oral or embodied knowledges carry risks if

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<sup>727</sup>As I describe above, marginalized people may become extremely visible by being documented in exchange for services, or because something they have becomes valuable to the ruling class. For instance, in *Tiger Flu*, Grist sisters and their companion substance, forget-me-do, are in high demand by a wealthy inventor trying to create a drug for living forever. The title of *Marrow Thieves* indicts North American settler colonial society for taking land, water, rights, and literal bone marrow from Indigenous peoples, who travel in secret for fear of discovery and capture. In *New York 2140*, the visible success of experiments in collective living – housing cooperatives in the relatively stable “drowned zone,” precarious social formations of the intertidal – draw attention from predatory real estate speculators. In *Future Home*, a repressive new regime rounds up and incarcerates pregnant women, including the protagonist. And in the *Southern Reach* trilogy, characters place themselves at risk by questioning official narratives from within a government agency. Just looking up certain files in the agency archives triggers heightened surveillance from higher up.

discovered. Circumstances continually challenge characters to deliberately remember and learn from the past in order to ensure a future; but also to survive to witness that future by resourcefully improvising. Often, it appears they can't do both. Keeping records and sharing knowledge when you can't trust in the future may seem irrational, but it makes sense within irrational circumstances like an ongoing crisis.<sup>728</sup> In the best cases, relational memory and knowledge transmission allow characters to seek strength from within community, rather than recognition from above.

Each double bind traps characters in an oscillation between equally desirable modes of action, unable to move forward with either. Still, in “facing up” to the double binds *as* double binds, many of these enunciatory communities find creative responses to their predicaments.<sup>729</sup> Alongside analyses of record keeping, this chapter has presented examples of storytelling, repair, and cultivation. As they rehabilitate memory technologies, communities refuse the power dynamics that previously structured their relationships to the tools. Each act of knowledge transmission enacts a future ethics: *We will survive, and you will be able to use this knowledge in the future*. And, each tactic or strategy that characters deploy is an enunciation: *This is how change happens, this is how to live*. In the context of climate change, people use these forms of advocacy to reject the immobilizing double bind, refusing to see immediate needs and long-term survival as incompatible.

Evidence from climate fiction shows how archives and records practices can perpetuate slow violence and trap people in inescapable double binds. However, archival practices also undergird the means to counter slow violence: steadily, painstakingly, painfully building a just world from the memory of the old. Many of the novels' responses to slow violence are about creative

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<sup>728</sup>As Fortun writes, enunciatory communities' “identity cannot be divorced from context. If citizens are irrational, it is because they are responding to an irrational context.” Fortun, *Advocacy After Bhopal*, 13.

<sup>729</sup>Stevens, “On Being in Time for Transition.”

destruction: a missile blowing up an archives (*Tiger Flu*), a strange new environment engulfing the Earth (*Acceptance*), or big banks failing unless they consent to nationalization (*New York 2140*). But there are also future-oriented practices away from the spectacle: in workshops, healing rooms, cultivated fields, story circles, domestic work in temporary camps, improvised laboratories in orchards, community meetings, and communal dining halls. In climate novels, these are the sites, close to the land, where people build futures by learning from the present and past, together. There's ugliness here as well as determination. Climate fiction's archival imaginaries confirm that power is a continual practice: "Power does not enter the story once and for all, but at different times and from different angles. It precedes the narrative proper, contributes to its creation and to its interpretation."<sup>730</sup> There isn't any one "archives power." Instead, climate fiction presents archival workers with a provocation: What kind of archives power do they want to cultivate with the time they have left?

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<sup>730</sup>Michel-Rolph Trouillot, *Silencing the Past: Power and the Production of History* (Boston, MA: Beacon Press, 1995), 28-9.

## 5. Becoming advocates: Archival workers concerned about climate change

### 5.1. Introduction

As six decades of archives literature show, an enunciatory community of archival workers coalesces, in many voices, around archives mattering to climate research, response, and adaptation. However, climate change repeatedly forces a choice between whether and how to align with or resist existing power structures in the process of mattering. Evidence from climate fiction shows that there isn't a singular archival power; instead, archival practices can perpetuate slow violence, persist through double binds, or painstakingly build towards a better world. In this chapter, I turn again to the experiences of those already participating in work that links archives and climate change. The concepts of “slow violence” and “double bind” characterize well the conditions in which archival workers become concerned about changes in the environment, connect environmental emergency to other matters in archival practice, and now seek positive change as a result of this understanding. The gradual accretion of effects, producing multiple, mutually incompatible obligations, shapes how archivists try to make change in their field in response to climate crisis.

Here, I report findings from an interview study with 13 archival workers involved in activities that connect archives, records, and climate change. Through semi-structured interviews, and by eliciting responses and reflections from participants, I sought to understand how these workers engage with climate, ecology, and environment.<sup>731</sup> This grounded analysis tells a story of how participants enter and find their way in the field, what it's like to do archival

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<sup>731</sup> Throughout this chapter, I refer to these archival workers as “participants,” “respondents,” “interviewees” and “informants,” somewhat interchangeably.

work while concerned about and experiencing environmental crisis, and the norms and expectations through which they pursue change.

Continually seeking to carry out principled, relational, and mutually accountable work through archives, these workers develop practices and principles for making change, stemming from sensitizing experiences of slow violence around working conditions, archival power, and changes in the climate. Neither formally organized nor acting with consensus, we may understand them as what Fortun calls an “enunciatory community” drawn together by contradictory obligations.<sup>732</sup> For example, participants cite contradictions between the archival responsibility to steward records and work towards justice, while fighting exploitation as workers and advocating for more resources; between archival assumptions of longevity, and a rapidly foreclosing future; and between the power that concentrates in archival practice, and the capacity archival workers have to act. Fortun uses the term “double bind” for situations like these, “in which individuals are confronted by dual or multiple obligations that are related and equally valued but incongruent.”<sup>733</sup> As they seek change and encounter barriers, informants find themselves in “double-bind situations [that] create a persistent mismatch between explanation and everyday life, forcing ethical agents to ‘dream up’ new ways of understanding and engaging the world.”<sup>734</sup> They continually (re)emerge as an enunciatory community in response to these experiences and in search of a just future for archives and the planet.

## **5.2. Being archival workers: beginnings, conditions, and climate implications**

What's it like to be an archival worker? From day one, respondents' approach to the work shows an interest in principled practice, and dedication to the relational and problem-solving

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<sup>732</sup>Fortun, *Advocacy After Bhopal*.

<sup>733</sup>Fortun, *Advocacy After Bhopal*, 13.

<sup>734</sup>Fortun, *Advocacy After Bhopal*, 13.

aspects of archiving. However, hidden, attenuated, accumulating, hard-to-see, and hard-to-represent damage – similar to what Nixon calls “slow violence” – characterizes actual working conditions in the field.<sup>735</sup> Acting within constraints keeps participants (and other archivists) from realizing goals, whether doing their jobs or making positive change in the workplace, archives field, and beyond. As one participant recounts, when everyday work is a matter of surviving against terrible odds and with very few resources, it's nearly impossible to develop a self-consciously principled archival practice. In other words, material conditions and restraints shape every aspect of one's approach to being an archivist. Therefore, any vision for the future of archival work amid climate crisis needs to take material conditions into account.

### **5.2.1. Becoming archival workers**

The archival workers I interviewed had been involved in the archives and records field for an average of 8.5 years at the time of interviews (2020-21), or just over 11 years at the time of this writing (2023).<sup>736</sup> Informants identify as women (8), men (5), white (10), Black (1), Jewish (2), and Latinx (1). Their average age at the time of interviews was about 36 (about 39 today). They've had normative careers in some ways: making multi-year plans, following established educational tracks or sub-fields, and finding work through connections. Nearly all attended college and received masters degrees from programs accredited by the American Library Association. Three respondents hold additional advanced degrees related to archives and records, three have related certifications, and three have achieved degrees or certifications outside of the field. Most of the group have worked without compensation as volunteers or unpaid interns (10

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<sup>735</sup>Nixon, *Slow Violence*.

<sup>736</sup>Following terms established in the anonymization principles for this study, this section reports demographic information in aggregate only. This erases some of the particularity of participants' identities and experiences while protecting their anonymity where preferred. See chapter 2 for a detailed description of methods, including how I requested demographic data and a list of anonymization steps.

participants), while just over half have held paid internships (7). Most have been employed in the field in a permanent position (10), but a majority (9) have also worked in term-limited, contractual, or adjunct roles. Participants often established a specialization and professional role early in their archives careers. Their activities include appraising, acquiring, and accessioning material; managing records retention; processing collections; creating and managing metadata; and various types of digital stewardship, from born-digital archives to digital preservation to digitization. Many teach with and about archives and archival work, supervise student employees, and answer reference questions. In talking about their work, most highlight its relational and problem-solving aspects in equal measure.

At the time of the interviews, informants lived and worked in urban areas in 10 watersheds and six census divisions across all major U.S. Census regions.<sup>737</sup> Like many library and archives workers, they remark that geographical and financial boundaries have shaped their career options.<sup>738</sup> They've performed archival work at a variety of organizations around the country, including archives and special collections at colleges and universities (public and private), community archives, government libraries and archives (national and state), and public libraries. A few define careers outside the mainstream, such as taking unusual jobs or working in nontraditional archives. For Jen Hoyer, an archivist and librarian, volunteering at a community archive has been a touchstone in her development:

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737Natural Resource Conservation Service, "US Watersheds (HUC 8)," accessed June 11, 2023, <https://nrcs.maps.arcgis.com/apps/instant/basic/index.html?appid=c5841399969a4f649fd0f806e5bc4748>; U.S. Geological Survey, "Hydrologic Unit Map," December 1, 2016, <https://water.usgs.gov/GIS/regions.html>.

738Boundaries include both the difficulty of moving to a new part of the country, and also the pressure to do so to find appropriate employment. Katrina Spencer, "Uprooted, Nomadic, and Displaced: The Unspoken Costs of the Upward Climb," *InformationToday* (December 13, 2022), <https://newsbreaks.infotoday.com/NewsBreaks/Uprooted-Nomadic-and-Displaced-The-Unspoken-Costs-of-the-Upward-Climb-156012.asp>.

Because we're able to go [to the community archive] and just do the do the work we actually wish we could do elsewhere, we've gained really valuable experience that has allowed us to do the work. For example: I had done education programs there that helped get me obtain employment doing similar work at the public library. So it's exciting because it has been a space for many of us to do the work we want to do in archives and then translate that into work that we hope can impact other spaces and their collections.

To another participant, the archives field seemed to be a place where it was possible to study learning processes in a deep way, outside the material restraints of teaching elementary school:

When I was teaching, [sigh] I just got to a point where I needed to do something different. I was very interested in how knowledge and understanding go from not being in someone's head to being in someone's head. And while that's a big part of teaching, the actual practice of an elementary school teacher doesn't allow for very much time to really contemplate that. And so I was looking for some way to just . . . I needed to do something different and I was realizing that was the part of education that was most interesting to me.

In fact, most respondents entered the archival field seeking principled work, and continue to act with a strong sense of responsibility. However, they often find that constraints, rather than affirmative values, exert a dominating influence on their practice. This shapes their understanding of what's possible for archival workers to accomplish in response to environmental change.

### **5.2.2. Working within constraints**

Material conditions shape practices, from the timescales on which archivists plan and perform their work; to the decisions they (can) make with the information available to them; to the influence they can hope to have on institutional change. Nearly all participants give examples of how constraints, incentive structures, divisions of labor, and the political economy of archives influence what they themselves do and what happens in the field. Significantly, most explain that resource constraints shape the material conditions of archival work. Backlogs, overwork, and

understaffing are typical. As a result, archives use space and energy inefficiently, contributing to a changing environment and forestalling climate responses. Continuing to grow collections despite such limitations defers maintenance. As one participant summarizes, backlogs are a nearly universal condition of archives for which archivists have proposed several solutions, including reappraisal, deaccessioning, and an efficiency-oriented processing framework called “More Product, Less Process” (MPLP).<sup>739</sup>

You know, MPLP and all these things that we talk about are related to backlogs and it's in a in a climate-limited and resource-limited future how can we justify this kind of collecting? How can we justify so much collecting if we don't even make if we're not even making the stuff we already have available? We we couldn't we that was untenable 15 years ago. That's why they wrote that frigging article.

The problem is decades-old. As several participants point out, funding, staffing, space allocation or development, and matériel for stewarding records have shrunk or stayed flat as the volume of records has inevitably grown.<sup>740</sup> A professional obsession with finding more efficient

<sup>739</sup>Reappraisal is a process in which archivists review existing collection materials and evaluate whether to continue retaining them in a repository. Reappraisal may result in deaccessioning, or permanent removal from archival custody. In an influential paper, Greene and Meissner present the “More Product, Less Process” (MPLP) framework on the basis that “processing projects squander scarce resources because archivists spend too much time on tasks that do not need doing, or at least don't need doing all the time.” Mark Greene and Dennis Meissner, “More Product, Less Process: Revamping Traditional Archival Processing,” *The American Archivist* 68, no. 2 (September 1, 2005): 209.

<sup>740</sup>In a 2004 survey of the field, 43% of archives managers reported an annual operating budget under \$100,000, while 11% managed a budget of less than \$20,000. In a 2022 update to the survey, the percentages had risen to 61% and 44% respectively. The comparison would be starker if accounting for inflation. Questions of resources go beyond dollar amounts. At HBCUs, “archives often find themselves kind of on the back burner” amid many other demands on limited resources (Kabugi). Not only are HBCU archives underfunded, often resulting in minimal staff and many unprocessed collections, but it's also difficult to obtain funding without compromising autonomy: “In response to these inequities, HBCUs and other Black nonprofit institutions are often pressured to partner with wealthier PWIs (or predominantly White institutions). This pressure to collaborate has only grown as funders [...] have pushed to prioritize underrepresented histories and BIPOC professionals. Far too many of the records related to Black history are currently held by predominantly White institutions, who now have new incentives to partner with HBCUs” (Phoenix and Rue). Beyond state agencies and the academy, “community-based archives have a strong desire to maintain their independence despite significant hurdles to generating revenue, acquiring and maintaining adequate staffing, and to providing care for collections” (Jules, 7). Partnerships with academic institutions challenge their autonomy, and the effort of constantly seeking grants is a barrier to long-term viability. A 2021 survey and series of summits with tribal archives professionals confirmed that tribal archives also struggle to maintain the funding, facilities, and staffing necessary for their broad array of preservation, access and other cultural activities. Tribal archives report median budgets falling between \$10,000 and \$50,000, with about half also reporting negative financial impacts related to the COVID-19 pandemic. Victoria Irons Walch et al., “A\*CENSUS (Archival Census and Education Needs Survey in the United States),” *The American Archivist* 69, no. 2 (Fall/Winter 2006): 291–419,

ways to process collections, emerging from the tension between growth and under-resourcing, has proven wholly inadequate to resolve the situation. In fact, as one interviewee explains, efficient processing even exacerbates concerns about space, energy, and paying for it all; it leads archivists to retain more than they would if local policies and capacity allowed more time to reappraise and weed records. Stripping down processing makes it less effective and more resource-intensive: short-term thinking. To the subset of interviewees who don't embrace the efficiency imperative, a more responsible approach would be to match the scope and scale of acquisitions to the means that are available to care for them. They argue that this would be a better use of energy, space, time, and personnel – resources that promise to become even scarcer due to a changing climate.

Every archival worker I interviewed cites political constraints that shape their actions and what's possible in archives. This is often a way to contextualize and temper the power they simultaneously attribute to archival practice. A typical example is prioritizing work in response to the influence of powerful entities in and around their organizations. Another is how decision-makers like administrators and funding agencies reward fads that come and go among management circles, rather than supporting worker-led attempts to build and extend sustainable systems. Trying to build archival systems under relentless pressure to go big actually undermines their ability to last. This is as true for climate preparedness and disaster response as for, say,

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<https://doi.org/10.17723/aarc.69.2.d474374017506522>; Makala Skinner, “A\*CENSUS II: Archives Administrators Survey” (Ithaka S+R, January 31, 2023), <https://doi.org/10.18665/sr.318227>; Magana Kabugi and Holly Smith, “Memory Work”: Archiving While Black, Changing the Future of the HBCU Landscape, interview by Ece Turnator and Laura Wilson, Podcast, 49:57, January 21, 2022, FLAME (Future Libraries, Archives, and Museums in Excavation), <https://open.spotify.com/episode/72AVRiBdP6xqWVs8AhzM5M?si=09b6b97784ae4c67>; Phoenix and Rhue, “Our Ancestors' Wildest Dreams”; Bergis Jules, “Architecting Sustainable Futures: Exploring Funding Models in Community-Based Archives” (New Orleans, LA: Shift Design, February 2019), <https://shiftdesign.org/content/uploads/2019/02/ArchitectingSustainableFutures-2019-report.pdf>; Miriam Jorgensen and Britnee Johnston, “Tribal Archives,” in *Sustaining and Advancing Indigenous Cultures: Field Surveys and Summits* (Oklahoma City, OK: Association of Tribal Archives, Libraries, and Museums, 2022), <https://www.atalm.org/resources/reports/atalm-reports/#tribal-archives-needs-assessment-report/1/>.

digital repositories. Going further, informants explain how political constraints determine what constitutes a records emergency that displaces resources from basic archival maintenance.

Working under political constraints shapes the contents of archives too. It's common for repositories to contain material that isn't there for any reason other than top-down political influence. This kind of pressure drains resources while limiting archival workers' autonomy. For example, one interviewee argues that political matters account for both large quantities of irrelevant materials in collections *and also* the inertia that makes it difficult to remove them:

How many people working in any archives could point to collections that have no business being in the archives but they are there because a previous director, a previous acquisitions person was asked to take them and they couldn't really say no or they just thought they were cool and saw an opportunity to acquire them and maybe they are cool but they just don't really fit their they don't really fit their collection scope, they don't really adhere to the collecting policy or the mission of the parent organization, and yet they're there in the archives and it's it is very hard to get things out of these collections once they're there. And I don't think that we should be taking that light- those situations lightly at all.

Archivists respond to each of these pressures under material scarcity, which themselves result from top-down decisions about funding and staffing. Many I spoke with turn to collections degrowth and right-sizing because efforts to acquire and distribute money and expertise more widely among archives haven't been successful. Political restraints dictate resource constraints, which in turn delimit what's possible in terms of climate response:

Um and so I think our efforts at getting more resources for archives, um building more inst-more of an institutional voice for archives um has depended on making people in power understand the value of archives in the way that we understand it and clearly that hasn't worked.

About half of respondents observe a third form of constraint: that the archives working world reproduces – unquestioned – the troubling power relations that organize the rest of the world. For instance, those performing collections work aren't always the most prepared to do so in terms of cultural humility or political analysis. As an advocate seeking justice in terms of archival

practice, housing, climate, and anti-capitalist organizing, Jen Hoyer finds that connecting rather than separating these areas of concern is a source of determination and strength:

Perhaps the only other reflection I have, on reading over my comments, is that it's so clear to me that I cannot disconnect any of the parts of my life from any of the others: I cannot talk only about climate change and archives without also talking about capitalism and archives, and without also talking about climate change and housing security. And so, in order to talk about climate change in my workplace, I have to be able to bring my whole self to my workplace: my anti-capitalist politics, my housing insecurity, and all the other perspectives and feelings I have about different policies, experiences, and issues. And yet, I recognize that not every library or archive is a welcoming workplace for everyone to bring their whole self; I don't know how we can have honest conversations in our professional spaces until our professional spaces are places where everyone can bring their whole, honest selves.

The repressive environment of many archival workplaces is a barrier to taking on major challenges in the field. When the power in political analysis comes from drawing connections between different forms of injustice, environments that force workers to sever such connections when they enter the building (or log on for the day) actively work against imagining, organizing for, and making change.

### **5.2.3. Labor implications for climate action**

Cumulative experience of working within constraints sensitizes these archivists to connections between environmental emergency and labor issues. They opine that it's a core responsibility for them to help improve practices and structures at work, such as by initiating change based on sounding out needs. Often, participants come to a new understanding of their working conditions in the course of taking action towards change: establishing and advocating for programs, experiencing inequity, being frustrated in their plans, or not having a say at work. Several become militant from experience. These encounters are setbacks in pursuing the principled careers they sought in joining the archival field; they're dissatisfied with how things

work. In fact, conditions in the field produce interlocking economic and affective barriers to change, as participants come to understand through the difficulties they face in attempting a local action. As a result, interviewees each link climate change to labor issues in the field and beyond. Some indicate that worker organizing is a means of pursuing climate mitigation and adaptation in archives. Without organizing for power, archival workers will continue to be unable to hold their organizations to account for promises and actions on climate change.

More than half of informants perceive that constant turnover – in leadership, archival programs, and a contingent and precarious workforce – takes place without substantive, progressive change in either their own organizations or the field in general. As a third of respondents trace out, precarity stemming from archives' labor practices and precarity resulting from environmental change intersect in archival workers' lives. Movement may occur as multiply precarious and marginal archival workers find ways to organize, pressuring the professional mainstream.<sup>741</sup> As I mention above (see 5.2.1 “Becoming archival workers”), most study

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<sup>741</sup>A rise in unionization at libraries and archives demonstrates growing engagement in improving material conditions. Three recent examples typify how archival workers in particular are organizing against precarity across the field:

- Beginning in 2019, a concerted advocacy effort for salary transparency led SAA to modify its job board policies in 2022 to require listing salaries for positions. Steps leading to this decision included a public spreadsheet where archival workers shared their salaries; supportive statements and policy changes by regional archival associations; coordination among archival workers to share news and develop tactics; and a SAA task force to study the issue.
- In January 2020, Samantha Winn established #52Fund, a mutual aid effort to “support the participation of QTBIPOC, BIPOC, LGBTQ+, disabled, and multi-marginalized archives workers in professional engagement” including membership and other costs involved in participating in SAA and its activities.
- In March 2020, several archivists formed the Archival Workers Emergency Fund (AWE Fund) as a form of mutual aid for archival workers experiencing hardships, such as loss of work, during the COVID-19 pandemic. The group raised funds using the SAA Foundation (SAAF) as fiscal sponsor, conducted research, and hosted public conversations about labor issues in the field. After SAAF ended its support for the fund, the organizing committee re-formed as the Archival Workers Collective (AWC), continuing its labor advocacy. Current and formerly contingent, precarious, and disabled workers, including those who are also people of color, form the core group.

Salary advocacy and #52Fund paved the way for AWEF, each campaign working from both inside and outside the boundaries and norms of the profession. Amy Rea, “Library Workers Unite: Unionization Efforts Grow Across All Sectors,” *Library Journal*, February 14, 2022, <https://www.libraryjournal.com/story/Library-Workers-Unite-Unionization-Efforts-Grow-Across-All-Sectors>; Department for Professional Employees, AFL-CIO, “Library Professionals: Facts & Figures,” April 16, 2023, <https://www.dpeaflcio.org/factsheets/library-professionals-facts-and-figures>; Melissa Gonzales, “Archival Salary Transparency Advocacy,” March 17, 2021,

participants have experienced unpaid or contingent work during their time in the field.

Contingent, precarious, and low-paid positions are common in archives and seem likely to continue being so.<sup>742</sup> Persistent low pay and use of temp labor often reflects small(er) budgets, such as long-term funding cuts from federal, state, and local sources as well as corporate parent organizations. Little or less money means fewer archivists and diminishing ability to maintain archives in both the short and long terms. The dwindling archival workforce is an existential threat to archives, without even mentioning climate response:

All archives are running out of archivists – it is clear that this is not sustainable from a workforce perspective or, again, an environmental one. We cannot shepherd thousands of years of materials, so.

That said, the widespread under-resourcing of archives produces circumstances in which not only do crises abound that archivists aren't ready to confront, but also more issues actually reach the level of crisis due to lack of capacity. The combination of political constraints and material

<https://www2.archivists.org/sites/all/files/0321-V-D-SalaryTransparency.pdf>; Samantha Winn, “Responses and Retrospectives: Samantha Winn on Mutual Aid in Response to Electoral Frustrations and the Creation of the #52Fund,” ArchivesAware: Awareness and Outreach for Archivists (February 12, 2020), <https://archivesaware.archivists.org/2020/02/12/responses-and-retrospectives-samantha-winn-on-mutual-aid-in-response-to-electoral-frustrations-and-the-creation-of-the-52fund/>; Archival Workers Emergency Fund, <https://awefund.wordpress.com/>.

<sup>742</sup>Both a 2017 salary survey of archivists and a 2020 survey of moving image archivists reveal gender and racial disparities in pay. The 2020 survey found that 40% of respondents carry student loan debt, nearly a tenth owing over \$100,000. A 2021 field-wide survey of archival workers found that 11% held term-limited contract positions. Contingent work wasn't far in the past for some full-time permanent workers, who had been employed in short- (11%), medium- (10%) and/or long-term (2.5%) contract jobs within the past four years. A 2021 survey of contingently employed New England archivists found that 18% of respondents had been contingently employed for “5-7 years over the course of their career.” Another 17% indicated that they had held contract jobs for more than 8 years. By the time they reached four to six years in the archives field, half of respondents “have already had three or more contingent jobs.” The study documents negative physical and mental health effects of contingent work. Finally, about a third of respondents to a 2022 field-wide survey of archival administrators report that they expect to add short- and medium-term contract positions within the next five years. For comparison, just 38% anticipate adding full-time, permanent positions. And 61% of administrators using non-permanent staff positions (including contractors) at the time of the survey “say that they rarely or never extend permanent job offers to staff in these roles.” Robin H. Israel and Jodi Reeves Eyre, “The 2017 WArS/SAA Salary Survey: Initial Results and Analysis” (SAA Women Archivists Section, 2017), [https://www2.archivists.org/sites/all/files/WArS\\_Salary\\_Survey\\_Report.pdf](https://www2.archivists.org/sites/all/files/WArS_Salary_Survey_Report.pdf); Brian Real and Teague Schneider, “2020 AMIA Salary and Demographics Survey of the Field: Findings and Future Directions” (Association of Moving Image Archivists, November 11, 2021), <https://amianet.org/wp-content/uploads/The-2020-AMIA-Annual-Salary-and-Demographics-Survey-of-the-Field-II.pdf>; Skinner, “A\*CENSUS II”; Makala Skinner and Ioana Hulbert, “A\*CENSUS II All Archivists Survey Report” (New York: Ithaka S+R, August 22, 2022), <https://doi.org/10.18665/sr.317224>; Bredbenner et al., “Nothing About It Was Better.”

conditions affects archives' and archivists' ability to respond to climate change, whether trying to mitigate environmental impacts on records or preparing for an emergency. Each time political constraints lead to putting off maintenance, the climate risk to archives and archival workers grows. One interviewee points out that resource constraints already put records in harm's way, as archival workers with limited or no equipment exist in an entirely different milieu than those whose repositories are well-resourced:

I had someone come to me about a collection he'd worked with on a reservation somewhere in the southwest and he was just telling me about how there was this one time of year where everything just got moldy and it wasn't even a question of whether or not to turn on the HVAC. They didn't have an HVAC. They didn't have the money to install one or to run one so. There the question wasn't even like how to do preservation more sustainably but how to use the tools we have to preserve our materials.

Constraints can make “best practices” irrelevant, as the excerpt above shows in reference to the sustainable use of heating, ventilation, and air conditioning (HVAC) in archives. Several participants have moved between altogether under-resourced organizations, or from an archives with less funding and staff to one with more funding and more staff but not necessarily more capacity to do everything it has taken on. Several have worked at skeleton units within relatively well-off institutions. Each testifies to how people and budget strongly influence disaster preparation, clarifying the kinds of decisions that are possible. Lack of capacity forces archival workers to designate exactly what material they'll have to leave behind in a crisis. An under-resourced archives facing environmental disaster, quickly or slowly developing, is inherently at a disadvantage and must contemplate bigger sacrifices in order to continue operations in some form. In this way, working within constraints can foreclose archives' and archival workers' possibilities for the future. In one of our conversations, Shannon Supple describes this narrowing

sense of the future as a kind of tightening spiral driving archival workers, collections, and repositories further into precarity:

I noticed that I brought precarity (of human labor and of collections) into the conversation as we discussed cycles, and it makes me think about the connection between the two. Cycles inherently encompass a return, but precarity seems to cut that away. What do we return TO, if our resources are continuously diminished? What happens if our cycles become spirals into smaller and smaller increments of possibility?

Not only do interviewees experience constraints in trying to do their jobs, but the drudgery of everyday work under these conditions can leave them with little time or energy to address the urgent demands of climate change. With too few archivists across the field, or at least viable archives jobs, at least two thirds of interviewees have too much work. They put in effort beyond their job descriptions and balance competing demands of external audiences. Overwork affects the ability to participate in imagining a better future, or endeavoring to build one, by occupying so much of material existence. Informants understand this, but several nonetheless express guilt about not being able to do enough.

### **5.3. Climate impacts for archivists: disasters, risks, politics, and interventions**

How does climate change affect archives and archivists? Respondents' experiences of living through disaster shape their perspectives on how to involve archives in climate planning, and influence them towards accepting loss. In interviews, they articulate their thinking on climate risks and politics, and relate how they're making interventions.

#### **5.3.1. Living through disaster**

For about two-thirds of participants, living through disaster influences their approaches to archival work in the context of a changing climate. Coming face to face with disaster's realities

sharpens their analysis of archival responses to climate crisis in a way that few other experiences would have. Several participants speak about the life-changing impacts of living through disaster. For example, Itza Carbajal notes that climate displacement and trauma formed the rest of the circumstances of her life:

Um and so like climate change is at the crux of like why my life is where I am right now, like I would not have done I don't think I would have done anything that I'm doing right now had um I not left New Orleans because of the hurricane and then the resulting um kind of like, I don't know, e- I would call it disaster but just like the result of um what happened after the hurricane and everything. Um. Yeah so for sure [laugh] climate change and my displacement like go hand in hand.

Some have lived and worked in areas that repeatedly flood in storms or suffer massive pollution due to corporate environmental failure. Hurricane Katrina affected several participants who lost homes to storm damage, lived and worked in afflicted areas, and lived alongside people displaced from zones suffering the worst damage. Several of the group play roles in disaster recovery and preparation as archivists. One recounts working in a library where post-crisis recovery extended for years. Another, as a collection manager, prioritizes a small subset of records to remove from the building in the event of emergency. Records can themselves be of use in climate adaptation, disaster preparation, and disaster response, both local to the repository and elsewhere. For instance, Sam Winn recalls how the geographically dispersed records of California architects became necessary in the aftermath of massive wildfires. As seen in a review of literature on archives and climate change (chapter 3), archives and records workers are getting involved in local and regional disaster response, particularly in areas with extensive histories of climate disaster. Some participants argue that archival workers should be able to contribute to disaster planning and climate adaptation plans in order for archives to be accounted for in disaster planning; otherwise, no one will act to protect or use archives in an emergency:

The city of New Orleans has an adaptation plan and so [archivists and records managers] have like tried to – I don't want to misrepresent what they're doing – but my understanding is they have tried to sort of get in and be the advocates for the role of cultural heritage in disaster response, in climate change adaptation, in all of these things. To me that's where a lot of the most meaningful change could come because people just don't pay attention to it until there's a disaster. I don't like that but that's the reality.

Experiencing disaster has led these archival workers to develop certain categories of response to a changing environment. Sharing access, distributing responsibility, regional planning, documenting change, and coming to terms with loss are overarching principles that guide their vision for future action. Each looks for ways to contribute to disaster planning and recovery from within the roles they happen to play at work. For example, as an archivist working in both academic and community-based spaces, Jen Hoyer projects a different disaster response for each. Meeting a pressing student need during an emergency would mean using the various networks (vendor relationships, consortial relationships, proxy servers) to which she has academic institutional access, expanding or sharing access to systems and spaces. For the community archives, she anticipates that disaster recovery would rely on different kinds of networks, such as distributing material and responsibility across a web of many small connections. Others see a role for archival workers helping people in the future understand massive changes that people today are living through.<sup>743</sup> For example, Itza Carbajal argues that documentation should be useful to people who need to understand and work with (or against) choices that were made; but also that it's hard to think about that in the middle of a crisis:

Versus like the present and teaching and recording and documenting about all these changes um if it just feels so I don't I don't know what what for, right, like it could be like that same setting out of just being like, well we want to make sure that people know that these are the options we chose at this particular moment so that they can either undo or build off of in the future so that's kind of but like I just in my mind I'm like not maybe because I'm in it.

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<sup>743</sup>Archiving to make sense of change is also a key theme in my study of climate fiction (chapter 4).

Above and beyond those who had experienced extreme climate and weather events, a majority of informants share a sense of currently living through calamity in the COVID-19 pandemic, while speaking about climate actions they had taken prior to the pandemic. Those who wrote reflections or joined me for follow-up interviews find it strange to revisit those memories. So much time has passed, and the material conditions of life were so different, that their past affective experiences are practically unrecognizable. Distance compounds the uncertainty they enunciate about living through catastrophe; they don't recognize the world in which they gave preliminary interviews. Several see the COVID-19 pandemic as a harbinger of future crises and general lack of capacity to weather them.

Living through disaster and environmental crisis prompts around half of respondents to explore the changing significance of loss, grief, and dying. Several express anticipatory grief for the loss of a beloved place to changes in the environment. One interviewee experiences a form of grief in letting go of a conception of what climate action can accomplish. Reading the most recent report by the Intergovernmental Panel on Climate Change (IPCC), they shift their thinking somewhat unwillingly from a goal of prevention or resolution to a goal of mitigation and adaptation, in light of the report's contents and their own soundings of climate politics. This participant testifies to losing faith in collective action to reverse or prevent environmental emergency. More mundanely, interviewees become accustomed to loss in everyday tasks: as processing archivists recycling out-of-scope material, digital archivists limiting the number of times they try to read data from obsolete media, or curators declining donor offers. Climate threats to archives heighten the significance of these ordinary practices.

### 5.3.2. Climate risks to and from archives

Informants each stress climate dangers to and from archives. Many, including all who work primarily with born-digital records, began making the connection between archives and climate in terms of the carbon footprint of digital storage systems. Others initially focused on archives' vulnerability to natural disaster, the carbon impacts of HVAC systems, and relationships between archival work and environmentalism. The more they learned, the bigger they found the problems to be. One can find climate effects of archives where least expecting them:

Or, you know, I – again, it is easy to be like, archives and archivists are old things, it has nothing to do with the digital environment. And then it's like, oh my god, rare books repositories have terabytes upon terabytes of materials available online. You know, how could we start to think about that?

Interviewees all consider the climate peril for archives (and vice versa) to be severe and declare it's past time to act. As both interviews and a review of the professional literature (chapter 3) show, storms, flooding, and fire can damage facilities and records, endanger archival workers and communities of users, and lead to power outages. Disaster planning and response by an archives, its parent organization, or its locality may vary widely; the lack or presence of incentives to improve planning, such as insurance requirements, can make a difference. Archives occupy built environments whose design and regulation don't account for changing climate conditions. Political attacks on regulatory agencies undermine the enforcement of existing legislation and availability of climate data. Community displacement and migration lead to the loss of cultural heritage, while also raising knotty matters of international law. And climate responses by archives may simply reproduce colonialism, like using systems designed and hosted in the North Atlantic to preserve climate-affected records from all over the world. Without

direct experience of climate disasters, few organizations in the field confront the risks head-on or develop appropriate responses.

Many participants remark that changes in the climate are inseparable from and also amplify other menaces to records, such as geopolitical turmoil and under-maintained infrastructure. Records are already deteriorating due to ongoing environmental factors, and archives have already experienced and are recovering from disaster. Therefore it's necessary to act and specifically necessary that members of the archives field act. Climate crisis has progressed so quickly that the stakes of changing or not changing archival practices have grown to be existential in a short period of time:

Interviewee: When I started writing my article I was thinking about it more like oh we need to do this because it will be better if we do it. And then as I was in the midst of all the revisions I was doing once it was at the point where it was going to [the journal] and I'm doing all these revisions I kept revising sentences to make them more urgent because it—

AW: [laugh]

Interviewee: —feels like since I started writing that article we've learned so much about how urgent this is and it's come to the point where it's not just, “Hey, we should look into doing this.” It's time to do it because [laugh] there's not much point in being an archivist when all of the continent is under water.

Given these risks and impacts, respondents divide as a group on the question of whether archives have any future at all amid climate crisis: that is, whether the matter at hand is *how to change archival practice* or *how to prepare for its coming demise*. However, they agree that current practices are untenable because of ongoing, amplifying environmental changes.

### **5.3.3. Power-mapping climate politics**

Participants map the terrain of climate response at every level in terms of targets, political obstacles, policy levers, and alliances. As one argues, the ultimate target for climate activism in

the archives field is to go to the very top of the relevant federal agency and apply pressure to get them to include archives and affiliated organizations in disaster planning and prevention:

I mean, it's fine to be like, archives are important, but unless we are getting in the face of directors of FEMA and being like, what is your plan for all of the libraries, archives, and museums once there's a declared disaster, then everything is just academic theory.

However, lack of political will is an obstacle to climate action in and out of the archival field. Decision-makers have more incentive to claim innocence than address problems. It isn't politically or professionally advantageous to leaders (in libraries, archives, and governments, for example) to plan, fight for, and implement serious mitigating actions and climate adaptation:

Because [climate action plans] outlive they outla- they're they're longer than people's professional careers in some cases or certainly in the case of governments they're longer than the terms of elected officials and so there is an incentive to make nominal changes and then sort of push push things down [inaudible/crosstalk] down the road, kick the can down the road, whatever.

Policy levers through which to achieve movement on climate and archives include triple bottom line accounting, insurance requirements, and building codes. Although participants mark a plethora of reputation-building actions that institutions have taken on climate, they agree that meaningful change will involve dedicated, difficult, less-than-glamorous work – for which it can be especially hard to muster the collective or individual will:

And it's um funny, not haha, that I think those two things are really similar. No one wants to do preventative work because it's hard to engage with it in any meaningful way, whether that's policy or resources or even accepting that it's part of the community that we need to practice care towards or with.

As resource attrition affects public agencies – from state archives to health authorities to enforcement of deforestation rules – it also attenuates the means to fight for change from within such organizations. Information gaps are a political matter here. Archivists may lack information about the scale of the problem or what to do about it: What *is* the archives' energy footprint?

What are ways to reduce it? Where can they look for models relevant to their situations? Even the most informed archival workers in my study find that it's hard to make a difference or participate in the pertinent decisions from where they are. As a result, organizational strategies tend to undermine climate action with short-term thinking and corner-cutting. Just as they do in all areas of practice, archival workers share the frustrating experience of running up against the limits of their power as they attempt climate action. An ostensible lack of information can provide a convenient excuse for climate *in*action from the top. Some of those I spoke with argue that we can't expect decision-makers to act without data about the nature of the problem, or actionable information about possible responses. However, as one participant points out, the kind of information that does capture the attention of decision-makers may be of limited use in building a just and sustainable future:

I think we even see in addressing climate change the things that get the most news coverage say are like carbon capture tech, carbon capture technologies and flashy new technologies that or it, it, with that will save us, rather than, okay what has worked in the past? Where did we go astray, how can we return to, I mean not, you know, not an idyllic past but certainly in through the course of human history there have been other ways of existing with the environment that were not this. Uh, so those are not the things that are that people are talking about as much at a very high level.

Provisioning information about climate matters is itself intensely contested. As one respondent asserts, the political positioning of the U.S. EPA and its activities presents obstacles to information-based strategies for making change. Another explains that one can't expect data or records to perform roles for which they were never intended. Making or collecting records doesn't in and of itself constitute justice or accountability; structures must exist in which records can be put to use in service of these aims. Widespread misunderstanding about this has a depoliticizing effect on archival workers and practices:

Interviewee: I think one of the things that the manuscripts tradition has, and this is probably my most unpopular opinion on archives—

AW: [laugh]

Interviewee: —but I think the manuscripts tradition has lulled us into a belief that storytelling alone creates justice and accountability. And what creates justice and accountability is evidence and the enforcement of violating certain norms or laws. So that's the thing like – it's not just evidence alone that's going to save us – like who's doing the enforcement, and that's an open question.<sup>744</sup>

So the terrain of struggle isn't over providing more or different information, but rather the distribution of material means and opportunities. Participants acknowledge this as they mark intersecting issues and movements through which archival workers might form alliances for both climate response and transforming archival work. Here they cite archivists' responsibilities to fight slow violence in its more expansive sense: natural resource and knowledge extraction, environmental damage, and displacement. Land sovereignty and health care are some of the climate justice issues they urge archivists to pay attention to:

And so thinking more holistically about what is a climate change organization? So it can be an environmental justice organization but it can also be folks like the Gullah Geechee community groups that are trying to maintain their land for example. That doesn't on its surface seem like a climate change issue but it is. Or recognizing the sovereignty of Native tribes and like making sure that they are recognized and and given their full due and receive the health care and whatever access to land that they need, things like that are all climate change issues, so I think that's really widened my idea of what organizations can do on climate and what is a climate organization to some degree.

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<sup>744</sup>As Drake argues, in the context of human rights violations, testimonies documented outside of official records regimes can provide powerful counter-evidence to fabricated or suppressed records. As Maracle says, “Memory serves. In a society governed first and foremost by spirit to spirit relationships to all beings, memory serves much differently than in a society in which property possession determines importance. To re-member is, first, directional. Indigenous people commit to memory those events and the aspects of those events that suit the direction we are moving in or the direction we want to move in if a shift is occurring.” The very fact of telling stories and recording memories isn't in and of itself sufficient to effect justice or change. As all three memory workers indicate, albeit from different perspectives, the power to shape change lies in the purpose for which stories are told, and the uses to which they're put. Drake, “Insurgent Citizens”; Maracle, *Memory Serves*, 2.

As another participant states, white supremacy and climate change compound one another and should be addressed together as the existential issues they are:

This is the number one thing that we should be doing you know, in addition to dismantling white supremacy. But also even the way those things work together! You know. [nervous laugh]

Affirming these intersections can deepen one's understanding of climate and archives, contributing to concerted, collective response. Jen Hoyer offers examples of archival work that explicitly addresses intersecting movements, including climate justice. Archives can support young people in their current activism by connecting them to histories of past activism in their communities:

And some of it is also having conversations. There was a fifth grade class in Brooklyn that I worked with this past year that was really awesome. The kids in this school were excited to learn about the history of local activism. We studied community organizing in Brooklyn and specifically in their neighborhood, where in the civil rights era there was really cool stuff happening literally on the block their school is on. In connection with this all of the kids were really involved with climate justice organizing—the Fridays for the Future last fall.

Archives can help people understand how climate activism is related to other forms of action. Through climate advocacy, interviewees come to understand roles that archives may play in a broader landscape of social movements, such as using archival collections in contemporary struggles and the potential to model archives after movement organizations.

#### **5.3.4. Making interventions**

Informants suggest three areas of ready-to-hand archives-based climate action: appraisal, reducing waste and energy use, and resource sharing. Nearly all participants see appraisal as a key means to reduce archives' environmental consequences like waste, energy use, and storage costs.<sup>745</sup> There are multiple points within cycles of archival work at which archivists make

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<sup>745</sup>Appraisal is an archival process for determining whether to keep, what to keep, and under what circumstances.

decisions about the value or urgency of records, including: collection development policies, donor conversations, digitization, processing, and preservation in a digital repository. Several interviewees cite climate concerns in order to change how they appraise at each stage, or to introduce more points of appraisal. They decline new material more often, deaccession material from existing collections, and digitize more selectively than in the past. They also make efforts to appraise collaboratively and invite people into the archives, as a way to enhance records related to climate emergency and ally archives and social movements.

Roughly two-thirds of respondents implement methods of reducing waste in and out of the archives: using less energy for archival buildings and servers, recycling deaccessioned records and archival supplies, repairing or repurposing supplies, and choosing materials that can be recycled. They base some actions on data analysis, gathering information to monitor environmental conditions in and out of the archives, evaluate the use of energy and space, and revise practices based on findings. A need for data or informed action is also a desire to delve into specifics, to quantify particular aspects of what seems to be an insurmountable problem. Examples of data-driven responses include adjusting HVAC for minimal energy use, opening or closing doors and windows in response to environmental conditions, and packing boxes more densely on shelves for thermal inertia. As with many maintenance tasks, monitoring environmental conditions largely consists of ensuring that the sensors, displays, and reporting functions are working correctly.

Drawing inspiration from real-life organizing that rapidly responds to urgent needs, several participants sketch out how sharing and redistributing resources among people and organizations can be part of climate response in the archives field. As well as direct mutual aid to

individuals,<sup>746</sup> institutional mutual aid is necessary when disasters occur through a combination of poor maintenance and climate change:

I'm thinking about how the place where I now work has an archive where they just discovered a mold outbreak because no one in the facilities department mentioned that the HVAC system was broken for ten months in the last year and this past year was so much hotter and more humid than normal. And so what our institutions can do in that moment is provide mutual aid to another institution. For example saying: I have equipment to help you remediate what's going on with this mold problem, send some send a couple boxes of things to us. I think that is a very real thing that we need to do for institutions in our networks that are in more vulnerable climate zones.

In each area of intervention, finding and applying models that respond to cultural, political, and resource contexts are important ways to counter the many factors that undermine climate action in archives. Nearly all informants characterize their normal archival work as having a strong problem-solving aspect; taking ready-to-hand climate actions fits into this approach. Putting knowledge into practice to help people right now can also be an organizing tactic because it demonstrates the viability of the alternatives you're trying to build:

So that's actually what I'm most interested in doing right now is finding small institutions I can work with and put some of these practices into use and spread awareness of the fact that you don't have to have an HVAC system to do good preservation.

Most participants plan and carry out small actions that work towards positive change and are solidly within their means, like modifying professional organization activities, adapting archival standards, creating climate policies, setting climate goals, and formalizing environmental practices in the archives. They voice the value of and need for small, cumulative actions in moving towards transformation, even though each falls short of radical on its own: "I do think that there, maybe it's like that dumb Marvel Doctor Strange thing, where there's like one

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<sup>746</sup>For examples, see note 741.

possibility out of 368 million or whatever – but I do think that even small steps or half-measures although not exciting can start to move the needle.”

Collecting data and pursuing a data-driven response to climate change can be advocacy tactics, garnering support from quarters that might not respond to another mode of action. It can be expedient to link archives’ climate action to existing efforts at an organization, although this probably means acting within existing political constraints. For instance, there are multiple reasons to reduce the amount of data that an archives retains. Mobilizing privacy concerns, records regulations, and environmental concerns together can be effective, where solely referring to climate concerns may not:

Our reasoning for the decision was a concern for privacy and confidentiality and records retention when we had disk images with a mixture of materials, as well as the environmental impact of keeping forensic images that could be much larger, in some cases several orders of magnitude larger, than the preservation file set.

Similarly, a participant describes how students in a masters-level course proposed a variety of tactics to pursue climate action goals indirectly, in workplaces where talking about climate is considered too polarizing:

And so what they were what they were thinking when we were brainstorming kind of live in class were ways to maybe advance some of those goals that they might have but while not leading with climate change. By saying, okay well what about the requirements from our insurance providers? What about what about like general broad-based best practices around disaster and risk mitigation?

In other words, archival workers must at least carve out and accomplish the actions they're already capable of taking. Although organizational politics can constrain what's possible, archival workers nonetheless seek out data-driven, contextually responsive, and achievable ways to intervene in appraisal, waste reduction, and resource sharing.

## 5.4. Making change: practices, principles, and experiences

How do these archival workers organize and seek change in archives' relationship to climate? Their practices begin with building theory from experience. Invoking a multi-vocal model of how change happens in the archival field, they oscillate between positions as insiders and outsiders, seeking effective ways to intervene. Organizing and taking action expands their capacity to act in solidarity.

### 5.4.1. Building theory from experience

A changing environment offers catalysts for archivists to build theory by making sense of their experiences. Few separate their environmental thinking from making sense of the world; each gains confidence as an advocate and archival worker in parallel processes. More than half of the group have thought about environmental matters from an early age. Personal encounters, family stories, pop culture, and formal education combine to cultivate an environmental awareness that shapes their thinking about most aspects of being in the world. One participant describes how difficult it is to trace back the origins of their environmental concerns:

Interviewee: You know I think it's similar—people have asked me when was the first time you became aware of race or started talking about race? And I've tried to think about it, but all I can think of it's just something that we always talked about in my family. And I feel like sustainability, kind of an ecological view of how you interact with the world, has always been part of my life. It's not something I ever questioned thinking about. It's like you also have to think about you know cleaning under your fingernails and making yourself food and the state of the environment and your race. Like. [laugh]

AW: [laugh]

Interviewee: It's just very much woven in to the fabric of my life, I guess because thinking about it started so early.

Importantly, they've always understood environmentalism and race to be foundational concepts for making sense of the world; and they consider sense-making and theory-building to be everyday practices, not somehow outside of daily material realities. Similarly, a respondent who came to environmentalism as an adult narrates engaging over time with the many issues comprising climate emergency, in parallel with becoming an archivist and parent. Many people I interviewed become and grow as activists over years of coming into contact with environmental politics, running the gamut from conservative climate denial to liberal conservationism to ecosocialism to anarchist formations. Particular threats to environmental safety galvanize some of them. Others take action specifically after connecting climate concerns to archival practice.

As participants grow and gain confidence in their roles as archival workers, they each come to find a voice as advocates for climate action in archives. These processes are inseparable. Often, questioning received knowledge or identifying a need for change, whether at work or in the field more generally, moves them towards adaptive and flexible approaches. For example, one participant's interest in sustainable archives preservation came from noticing the contrast between preservation best practices taught in the classroom and actual practices in their workplace. This observation led them to seek guidance on culturally and environmentally informed archival practices from a variety of sources. Exposure to material conditions that ran counter to received knowledge encouraged them to question that knowledge and later seek to improve upon it:

It was a very specific moment. I'd been learning for you know several months throughout the course of my program about what needed to be done to preserve materials and to make a good preservation environment and all I heard was HVAC, HVAC, HVAC. And chemicals to get rid of pests and all these different things and I actually didn't think to question it because I'm like oh I don't know how archives work, okay, I guess this is what you need to do. At the same time I knew that at the [archives where I worked] they didn't do any of that because they didn't have that kind of a building [laugh] and yet their materials were fine.

This isn't to imply that everyday theory-building leads to certainty or closure. It's an iterative process that unfolds over decades and beyond the boundaries of academia and archival work.<sup>747</sup> The theory that informants build from experience guides their thinking on what should happen with archives in a changing climate.

#### **5.4.2. How change happens**

As participants seek models for how to mainstream a formerly marginal issue, they historicize how change happens in archives. They perceive numerous aporias in the field, often drawing connections between two or more wicked problems: climate change, austerity, out-of-control collecting, lack of diverse representation in records, white supremacist structures, neocolonial power relations, preservation hazards to digital content, and precarious labor. Each aporia contains and reproduces barriers to resolving it. Nearly everyone I interviewed feels that neither they (as individuals), their organizations, nor the broader archives field have successfully worked past these obstacles.

In light of changes in the environment, furthermore, each interviewee questions and reimagines the very purpose of archives and archival work. For one, they conclude that sustainability principles can't meaningfully apply to select aspects of archival practice, but instead require changing every part of the records life cycle. Many question the meaning of keeping records on the cusp of catastrophe, for a future that may never arrive. Respondents often

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<sup>747</sup>Popowich writes, "Theory grows out of attempts to make sense of our lives, especially as aspects of them are permitted or forbidden, encouraged or constrained, by people and things outside of ourselves." Hudson observes that economies of knowledge production in LIS deny the possibility of such theory-building. Sam Popowich, "The Onus of Explanation," *Pathfinder: A Canadian Journal for Information Science Students and Early Career Professionals* 2, no. 1: Proceedings of the 2021 Forum for Information Professionals: Knowledge as Resistance: Kooky Academic Theories in Action (April 2021): 9; David James Hudson and Désirée Roachat, "Racial Capitalism and Knowledge Production in LIS: A Conversation with David James Hudson" (20th Annual Library Research Forum, Concordia University Library, April 26, 2022), <https://www.youtube.com/watch?v=asUAz0NC4ts>.

frame this questioning as a matter of what archival workers owe to the future. Current, interrelated archival problems call for confronting harms of the past to make room for generations to come.

Finally, reflecting the insufficient means available to archivists, interviewees discern current best practices to be out of touch with the material conditions in which most archival workers exist. It seems equally impossible to either follow these best practices with the means at hand, or to change how standards are made.<sup>748</sup> Still, dwindling resources leave no option but transformative change:

I mean the real downer part of me is like, what do we have to lose? You know, like sure, archives could be less resourced than we currently are, but in some places I think they would say, no [laugh] we literally could not be less resourced, so why not try something new?

And how does change happen? Interviewees narrate a rough pattern in many voices. Ideas enter mainstream awareness from marginal origins. Engagement with those ideas – such as through debate, adoption, and adaptation – happens at first in small pockets across the field. Successful uptake may happen first where communities of practice get on board and make use of practitioner-members’ skills and expertise to put ideas directly into action in their workplaces. Additional awareness grows as big professional organizations acknowledge the validity of the new approach. This means that new ideas often first feature as special topics in workshops or conferences, thanks to officers or committee members who personally invest in them, but may later come to form a central focus in professional development programming and publications. Grantmakers may begin to issue programs that incentivize archival organizations to steer their

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<sup>748</sup>As seen in chapter 3, professional literature on archives and climate change offers numerous examples of this double bind in action, particularly when evaluating archives buildings and disaster preparedness. See for example: Aarons, “Contingency and Response Management”; Daniel, “Building Management and Maintenance”; Craig et al. “There Is Disaster Planning”; Lebel and Bigeard, “Construction of an Archive Building”; Linden, “Getting Greener”; Nsibirwa et al., “Effects of Climate Change”; Kanyengo, “Preservation and Conservation.”

work in a particular direction for funding. These actions by professional organizations and granting agencies in turn catalyze or expand communities of practice, while sparking further debates and even backlash. Over a long period of time, and through multiple iterations of engagement at many different levels, initially marginal ideas finally become mainstream. Becoming normal can erase the struggles involved in getting there, as new generations of archival workers encounter the now widely acceptable ideas upon introduction to the field, and come to take them for granted. Mainstreaming also sidelines lingering discomfort or objections, replacing them with material concerns like how to shape archival practices to fit the new norms. Such trends have occurred both before and within participants' time in the field. Finally, the mainstreaming of ideas into norms is no guarantee that they're permanently settled. The cycle of debates in the field tends to recur.

#### **5.4.3. Making change from outside and inside**

Interviewees have a lot of archives experience but suppose themselves to be outliers, particularly given their involvement in climate action – a tension that typifies their advocacy. Their experience shows that meaningful change comes from reaching, informing, and getting support from people who are directly doing the type of work one is proposing to change. Like many participants, one interviewee understands the impacts of their research and advocacy as a matter of developing a specialized expertise and being able to speak to many audiences on that topic: “I don't know how much power I [have] to influence other areas of archival practice, but I feel that my expertise now backs up what I am saying on sustainability.”

Because informants are directly involved in the work, have climate-related expertise, and often act within what they regard as norms or boundaries of the archives profession, they're in

good position to help make change. They lead, serve in, and seek support from professional organizations. Defining the profession and its role in society is important to them. Actions through which they seek to make changes in the field often fit within these boundaries: organizing conferences, convening task forces, writing reports, and forming committees in response to reports. They also find themselves at inflection points where *not* changing practices is increasingly more difficult and costly than changing. Facing an overwhelming problem of environmental change and feeling there's nothing to lose, archival workers draw lessons in patience and perseverance from how change tends to happen in the field.

On the other hand, a majority of interviewees recount experiences through which they come to understand themselves as holding a marginal position in the field. Some depart from archival norms in their practices: fairly compensating community partners, adapting standards to idiosyncratic materials, creating unconventional workflows. Others feel out of place, for instance as non-academics in academic spaces, or as non-experts in environments where they perceive expertise all around them. They believe the network of archival workers concerned about environmental emergency to be small, if growing. However, their own attention to climate makes them unusual in their immediate work environments. They reflect on how paradigm-shifting defiance of norms must come from the margins, but also how hard it is to push for change from the edges of a community of practice. Organizing from “inside” *and* “outside” of a system might mean agitating from in and out of professional organizations to change a policy, or repurposing rules to radical ends.

Respondents turn to familiar tools of archival advocacy in climate action: writing, research, and education, with emphasis on tactics that use and build member skills.<sup>749</sup> Participatory modes

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<sup>749</sup>Nearly everyone I interviewed has written papers or given presentations on at least one aspect of environmental crisis and archives.

of education help people gain confidence while they learn about a problem together. This dovetails with tactics like teach-ins, strengthening arguments with research, and building awareness of climate effects through formal training programs like library schools. Political education is a pillar of organizing around climate and archives, as Itza Carbajal describes:

Yeah yeah I think so for sure I I love education so like that's that's where I'm most comfortable in starting and so it's like I I think education is really useful when um there's uncertainty, right, like you want to learn more in order to feel more confident um in what you're doing um but I think right now because I'm in the state of hesitancy like a a strategy for me that I would probably encourage for others would be um, not even just brainstorm brainstorming, I I would like use a word like imagining like a like thinking about ideas and coming up with ideas really is the the way I would want to phrase it. Coming up with ideas with others.

Defining one's role is a key step in finding a place as an advocate. Do they feel they can contribute most as a teacher or researcher? An information provider? An archivist influencing resource use at work? A bridge between archives and other domains? An advocate networking with other advocates? When is the right time to inhabit these various roles? What skills do they bring to each? For Itza Carbajal, an experienced organizer, recognizing and building skills and capacity can be a bridge from a big-picture understanding of power relations to how a particular group of people can come and stay together to accomplish a goal. Everyone being able to contribute is at the heart of organizing:

For sure it comes from my experience of organizing um because I think it's it's like a [sigh] somewhere in between discussions around like power and also discussions around how like to create a not just a team but like a a group of people who feel as though they're contributing in the best way that they can, right, and so it's like my my [sigh] kind of like one of my principles is like your your contributions and particular your capacities may look completely different than the person next to you and that doesn't mean that your contributions are better or worse than theirs, they're just different.

Archival experience can help widen one's sphere of influence in climate advocacy, like bringing an additional set of skills and knowledge to an activity that "anyone can do." People can

participate in climate actions by contributing their perspectives as archival workers. It's also possible, as one interviewee implies, that they can't *not* participate as archival workers:

I think um like when you or when someone as as an archivist attends like a climate protest or engages in a beach cleanup project or calls their representative and tells them to oppose uh pipeline projects, right, those are things that those are things that, you know, anyone can do. But we're doing them as as cultural heritage professionals, information professionals, right?

#### **5.4.4. Activist affects**

Although participants often represent themselves as acting and speaking from the margins of an archival community, it galvanizes them to see more archival workers and students coming to share their concerns about climate, labor, and justice. As several informants tell me, they're working through the emotional sides of comprehending the scale of climate change and pursuing climate action at this late stage. Actions follow emotions; alternatively, they need to work through emotions in order to get to a place of action. Seeing evidence of collectivity moves some participants beyond wondering if climate action is worth doing, into being certain that action matters. Organizing with others who share concerns but have different experience and expertise can be a source of hope, as Itza Carbajal expresses:

Oh man, I mean, in the most simplest way like it was ch-mind-blowing, like um I think [sigh] a lot of times when you might be working out of a place of uncertainty or even like um hopelessness? I don't think I was at the place of hopelessness but I definitely was at the place of uncertainty um and so being able to connect with other people who either were kind of in a similar place that I was, in the exploratory phase where you just like you have like a hunch that there's something there, that there's like, you know, a wealth of possibilities versus like also then finding people who are just like, you know, no we've we've kind of passed that point but we want to bring you to the point where we're at, um it was just I think really um heartening uh because you don't you, one, you don't feel alone, and then you also are able to eliminate some of that uncertainty to say like, oh yeah no like I'm not I'm not crazy. [laugh]

Organizing with others for change can be a way to seek purpose, as several participants describe. In Shannon Supple's words, to counteract purposelessness, pick a purpose and accomplish it:

When you feel unmoored sometimes you realize, okay I need to act. I need to do something to help myself feel like I have more of a compass, that I know where I am and for some people that will lead to, okay let's put together an action plan. Let's figure out what needs to be done.

Connecting labor issues to climate concerns, including through personal experiences of precarity, shapes nearly all respondents' sense of the problems and the means at hand to address them. By speaking up about labor issues and being active union members, for example, they acknowledge that only limited change is possible without archival worker power and fair working conditions. Establishing this connection is an important counter to the common political move of pitting labor justice against climate justice. And feeling oneself to be part of a collective is highly motivating. As one participant voices, collectivity gives them the confidence to directly contest anti-worker narratives and stand up for fair treatment.

Each of these examples illustrates the affective experiences that characterize archival workers' climate advocacy. There are many ways to understand affect but, particularly relevant to the current project, Clough defines it as “the augmentation or diminution of a body’s capacity to act, to engage, and to connect.”<sup>750</sup> The constraints that bind archival work reduce archivists' capacity to act (see 5.2 “Being archival workers,” above). By contrast, most interviewees show how participating in organizing and activism around climate and archives shapes their emotions and expands their capacity to act. This allows them to figure out how to contribute, and to persist through trying circumstances. As one respondent says, “it's just such a long fight to achieve things that are almost happening too late.” It's rare to be able to see what comes of organizing,

<sup>750</sup>Patricia Ticineto Clough, “Introduction,” in *The Affective Turn: Theorizing the Social*, ed. Patricia Ticineto Clough with Jean Halley (Durham, NC: Duke University Press, 2007), 2.

but several informants find hope in witnessing the efforts of many produce change over time. One participant, Sam Winn, faced numerous obstacles as an early organizer of mutual aid among archival workers. At the time of our interview, she was able to see how her and others' successive waves of effort helped open the way for a mutual aid campaign with broad reach in the field.<sup>751</sup> Speaking from multiple affective places and experiences, the people I interviewed concur that action can create its own path forward. In the context of climate crisis, activism and advocacy can help fight against the ways that working within constraints shrinks one's capacity.

#### **5.4.5. In solidarity**

Archival work is highly relational, as nearly all participants emphasize. Just as interdependence and mutual responsibility to others are core concepts in their practice, more than half of interviewees speak of solidarity as a matter of thinking and acting beyond one's immediate personal concerns and needs. For one thing, acting in solidarity could mean *not* framing climate change as a personal concern, even though many climate activists deliberately do. Whether or not they have direct experience of climate disaster, informants compare climate change's outcomes for themselves to outcomes for broad classes of others, relating with empathy and drawing contrasts.

Many position themselves at a distance from, and therefore implicate themselves in, the slow violence affecting communities on the "front lines" of changes in the environment. For example, several assert that it would be easy for someone in their class position to ignore or avoid signs of slow violence like infrastructure breaking down, inequity in health care, food deserts, and environmental damage. Their relative privilege in geographic and economic terms also enables mobility in an emergency. Jen Hoyer observes that someone in her class position could escape

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<sup>751</sup>For details, see note 741.

certain climate impacts to which her region is vulnerable. However, she considers it morally troubling that her experiences and material circumstances differ more and more from others’:

I totally feel that as someone who ... if there's environmental devastation on this city, I can go somewhere else. I can figure that out. A lot of people don't have the means for that anymore. And there are folks who are losing their jobs because of the way climate change is impacting whatever industry they work in and I am not. So in that way it's not impacting me as directly, yet it is because it's widening gulfs between me and other parts of humanity.

Several participants frame solidarity in terms of equity and justice, following the leadership of people who have experienced dispossession due to a changing environment. As Jen Hoyer and others say in our conversations, it’s good for archival workers to recognize the limits of their knowledge about climate change, cede authority to those who have knowledge beyond that limit, and adapt archival practices based on what they learn from ceding authority:

But I think it also means inviting those folks who have been most impacted by climate change, who maybe have different ideas than I do about the causes and impacts of climate change, inviting them to come into our archive and say, “take a look around for the things that you think best represent a correct narrative of how this all happened.” What things would they point out in our archives that we might not have identified as being part of this story? That's really important.

As nearly all respondents agree, relationships are the foundation for making change, and transform through the practice of organizing. Ties between proximate workers can grow into a larger movement by forming and maintaining a dynamic web of connections, building upon shared experiences of double binds and a willingness to act. Several participants map out already existing networks that could support climate action. And some regard the research interview as an organizing conversation, one of many small steps towards collective action. Finally, participants assert that making change is better undertaken collectively. Itza Carbajal sums up this shared perspective:

And so like that is like a strategy to me um just to not work in isolation um versus like education, it might be appropriate for you to work in isolation, might be appropriate for you to work in groups, it might be appropriate for you to do both, um but for sure when you are hesitant because you yourself may not know where to go, it's helpful to work within a group or a community, a team, whatever you want to call it, um to say even if y'all don't end up working together to just say like, hey well what are you doing? Should I join you? Or should I like do my own thing and we're just kind of in communication or should we like kind of work in parallel?

We can see evidence of solidarity-in-action through the testimonies of study participants who organized climate teach-ins in fall 2019, loosely coordinating through Project ARCC.<sup>752</sup> Gaining support from peers provided key catalysts in building from the spark of an idea into a widely dispersed undertaking, as the initiating organizer (Itza Carbajal) tells me. Even one person encouraging her to take an idea further made a big difference:

I have to not even just acknowledge but like I have to stress that like without the help of, you know, these people that I that I found um to help kind of strengthen my my hunches like I wouldn't have been able to do any of this. Um and that like begins with just Ted [Lee] also because it's like I had a hunch and then I put something online and Ted was like, oh I think you're on to something, like and then from there like that hunch or like this question, because then I remember like sending an email um to the Project ARCC group um like by encouragement by um Eira [Tansey] where I was just like, hey I want to do something, what do you think? And she was like, yeah just ask the question to the group, and then from there it's like yeah it just like snowballed into something great.

Another organizer emphasizes the teach-in's generative, supportive environment. Being in space together mattered more than achieving specific goals:

Um but I think we had a good a small like hour-long discussion. You know, it wasn't an it wasn't an extensive teach-in with like presentations and stuff. But we brought some, some books and resources for people to look at and I, I had some really general discussion questions and some people brought ideas and I just wanted to be encouraging, particularly to students, like whatever they had to say let them say it and get it out and we can work through some problems together.

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<sup>752</sup>“Climate Strike Teach-Ins,” *Project ARCC* (blog), September 11, 2019, <https://projectarcc.org/2019/09/11/climate-strike-teach-ins/>.

Still another teach-in participant stresses that, by building knowledge together with peers, it becomes possible to think and act bigger than the individual. Despite their differences, the archival workers I interviewed all acknowledge the massive scope of environmental change and its current and potential implications for archives, and life on Earth. Pursuing change can be daunting. They draw determination and affirmation from knowing themselves to be one of many. More than half feel most powerful when they're contributing skillful work to a collective effort alongside others who are doing the same. As these examples show, solidarity provides a moral basis for building relationships towards making change, and relationship-building in turn strengthens solidarity.

## **5.5. Conclusion**

In the testimonies of archival workers concerned about climate change, slow violence manifests through widespread problems with archival working conditions and inequitable allocation of funding, staffing, expertise, and influence among archives. Resource limitations result in crises that archivists are unready to confront, and more concerns become crises amid lack of capacity. Deferred maintenance, backlogs, overwork, and understaffing each grow the climate risks. All informants deem climate and archives to pose severe hazards to one another, agreeing that it's urgent to act. However, many mark gaps between the capacities available to a minority of wealthy, well-staffed and -housed archives in the North Atlantic, on one hand, and the limited funding, infrastructure, and authority that accrue to most other organizations. The slow violence of resource limitations perpetuates multiple harms over time: small, poor archives facing environmental disaster must accept more drastic steps in order to continue to exist. These material circumstances shape how archival workers understand what's possible to accomplish in

response to climate crisis. Although information and policy levers are available to support action, lack of political will is a key obstacle. Having come face to face with the realities of disaster sharpens respondents' analysis of archival action in climate crisis, in a way that few other experiences would have. They reflect that working within institutional norms can be expedient but not necessarily serve justice.

A key double bind in these archival workers' experiences lies in competing demands to cultivate a principled practice while operating within constraints. Although most participants enter the archival field seeking work of conscience, and maintain their commitment to a critical approach, constraints often exert more influence on their practice than do professional values, career aspirations, and moral or political positions. Those working in low-resource archives live with the injunction to meet best practices and standards to gain legitimacy and access, while unable to ignore the irrelevance of standards to realities on the ground. Defining archival work and its role in society is important to the archivists I spoke with. However, due to the double bind of principles and material conditions, they experience contradictory messages: advocate to keep archives the same – by sustaining funding or promoting their mission and value(s) – while also reforming these institutions and methods so that they might play a more benevolent role. Participants care enough about archives to want to make them better, less harmful, but the very conditions of the work present one barrier after another to doing so.

A second double bind relates to how informants position themselves as insiders and outsiders as they move through the field, and the ways of using power that each positioning affords them. Respondents acknowledge the qualities that give them insider status: years of experience, institutional affiliations, respect and standing in professional organizations, records of publication and speaking. Still, experiences of marginality remain fresh, whether an interviewee

recalls questioning long-standing norms as a masters student, joining a new community of practice and feeling like an imposter, anxiously awaiting a contract renewal, or being the only person talking about environmental emergency at work. The movement between margin and center is constant and contingent. Participants may successfully advocate on an issue by leaning on their insider status, but marginality positions them as dynamic change agents according to their collective model of how growth happens in the field. An insider may lose status by advocating, while an outsider's advocacy might become less effective should they come to be more of an insider. Archivists exist in the space between these positions. Responding to such unresolvable contradiction can look like subverting standards for unusual purposes, or forming alliances across the insider-outsider continuum to press for change from all sides.

Within these double binds, archival workers pursue climate action through several forms of enunciation. More than discourse, their efforts expand their capacity to act. Participants discern that the archival field has failed to address its biggest problems, with working conditions presenting a barrier to change. Building theory from experiences of living through and trying to make change, they develop and act on a concept of how big shifts normally happen in the field. They position themselves as insider-outsiders in order to figure out a strategy, adapting their tactics in a flexible kind of advocacy. Climate and archives organizing draws upon both traditional archival advocacy and also methods from social justice movements. For the workers I interviewed, becoming advocates is an iterative process over years of experience and exposure, including sensitizing experiences around the intersections of archival work and climate change. Among many possible archives-based climate responses, three areas of intervention emerge from the conversations: appraising differently, reducing waste and energy, and sharing resources among archives and archival workers. Data-driven actions in these areas succeed by using

politically expedient arguments to effect local change. Facing double binds like how to advocate for a social institution of such close association with slow violence, informants stress the relational heart of archival practice and seek opportunities to act in solidarity.

When archival workers talk about change and sustainability in our conversations, they're calling into being – or seeking after – the ability to continue changing and making innovations into the future. Meanwhile, the situation today locks them into a future with little room to move. As Schulman argues, political action is extremely rare; few people become active even about issues that matter to them, in both senses of “matter.”<sup>753</sup> It's hard to understand why hardship makes some people militant and others shrink. And, what catalyzes those who enjoy relative comfort and privilege to act in solidarity with those who don't? Both determination and solidarity can waver.<sup>754</sup> Encouragingly, experiencing solidarity motivates archival workers to do more organizing. They act as a community in several ways: citing one another's work (including in the interview space); organizing panels and workshops together; and maintaining friendships that both pre-date and develop along with a loose network of archival climate advocates. Teach-ins in particular draw forth a self-conscious awareness of being in community.

However, as these interviews illustrate, a person's understanding of how they can contribute to making change, much less what they're contributing to, can always be shifting. This constant movement characterizes Fortun's enunciatory communities, in which advocates are bound tightly by double binds but loosely held together in their advocacy. Strong movements emerge from

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<sup>753</sup>Sarah Schulman, *Let the Record Show: A Political History of ACT UP New York, 1987-1993* (New York: Macmillan, 2021).

<sup>754</sup>In Fortun's telling, this kind of immobility is characteristic of middle-class advocacy: “The conundrums of activism in Bhopal were daunting and raised perennial questions for all involved: How can middle-class progressives work for justice in collaboration with those denied it? Can middle-class progressives acknowledge the gross inequalities that they both represent and work within, while relying on purposefully egalitarian styles of engagement? What styles of leadership are appropriate? How can expertise be deployed without reproducing status hierarchies? How can dissenting opinion be respected without paralyzing collaborative work? To whom, or what, is the middle-class progressive responsible?” Fortun, *Advocacy After Bhopal*, 253.

addressing environmental and social struggles together, developing responses that meet the complexity of the situation while retaining – rather than reducing – the complexity and contradiction.<sup>755</sup> Archival workers in this study grapple with and offer sophisticated analyses of the complications and interconnectedness within climate action. Achieving and asserting collectivity is its own challenge.

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<sup>755</sup>Martinez-Alier writes, “Many cases of social conflict support the thesis of an 'environmentalism of the poor', that is, the activism of poor women and men threatened by the loss of the environmental resources and services they need for livelihood. The languages they use are, perhaps, those of indigenous territorial rights, or the language of sacred values, though they are not 'deep ecologists.’” Examples include campaigns against gold mining in Brazil and Peru; oil extraction, environmental damage, forced labor, and state violence in the Niger Delta, Myanmar, and Ecuador; tree plantations in Venezuela, Thailand, and Costa Rica.; and dams and displacement in Chile, India, and Guatemala. Such movements also fight for land-based rights and livelihoods, reforestation, and local control – as seen in Guha's study of the Chipko movement. In fact, Nixon based the theory of slow violence on the work and careers of writer-activists who articulate the links and complexities of campaigns like these through multiple repertoires of advocacy: Wangari Maathai, Ken Saro-Wiwa, Arundhati Roy, Indra Sinha, Abdelrahman Munif, Jamaica Kincaid, June Jordan, Njabulo Ndebele, Nadine Gordimer, Rachel Carson, Richard Rodriguez, V.S. Naipaul, and James Baldwin. Joan Martinez-Alier, *The Environmentalism of the Poor: A Study of Ecological Conflicts and Valuation* (Cheltenham, UK: Edward Elgar, 2002), 119; Ramachandra Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya* (Berkeley, CA: University of California Press, 2000); Nixon, *Slow Violence*.

## 6. Refusing the double bind: building power as archival climate advocates

### 6.1. Introduction

The core argument of this dissertation is that forms of slow violence produce double binds, which catalyze archival workers into an enunciatory community of climate advocates. This conclusion, and the evidence behind it, offer a kind of organizing tool for archival workers. Setting out on this project, I expected that the contradiction most vexing to archival workers would be how to preserve records when the future is so uncertain. I also expected to find that ideals and principles of archival work, and a shared interpretation of archival power as domination, would guide archivists' climate advocacy. Finally, I anticipated that archival workers would understand themselves to part of a climate movement within the archives field as well as worldwide. However, the situation is much more complicated.

This research finds that archival workers are trying to pursue principled work in conditions that prevent them from doing so – not only the material limitations of work sites, but also political obstacles to taking climate action. They develop politically expedient strategies and tactics in response to local conditions, while using public statements and teach-ins to extend their advocacy across the field. As climate advocates, they oscillate between acting as insiders and outsiders in the field, never settling in one position from which to effect change. Complexity and contradiction hold them together as a community of advocates. There's ample knowledge in the archives field of the significance of climate change, the environmental impacts to and of archival work, the need for archivists to respond to the crisis, and methods for responding. However, findings indicate that such answers make little difference in everyday practices, if they don't also face head-on the material conditions of archival work and the political relations that determine

and reproduce those conditions. To further illustrate the complexities, I return to the questions with which I began the research.

### **6.1.1. How do archival workers engage with climate, ecology, and environment?**

Archival workers engage with climate, ecology, and environment through their ordinary work: curating and using records about climate, evaluating archival work in relation to climate, and designing systems with environmental considerations. Through these engagements, they contest archival politics and come to challenge received norms and knowledges. Encounters with climate disaster, response, and recovery sharpen their analyses of the state and future(s) of the field. As both professional literature and climate fiction show, record keeping and memory practices play various roles in surviving and rebuilding in the wake of crisis. As seen in an interview study, archival workers become climate advocates as they progress in the field. The theories they develop through each of these experiences explain their change-making practices more than do abstract concepts about power, or affirmative values about the purpose of archival work. Many archival workers experience archives power not as domination or discipline, but as a matter of developing tactics to work through and around norms. Their climate advocacy includes intervening in appraisal, reducing waste and energy, and sharing resources. They develop pragmatic, expedient strategies and tactics that respond to local politics, extending their advocacy across the field through public statements and events.

### **6.1.2. How do slow violence and double binds shape these engagements?**

A critical review of professional literature repeatedly demonstrates how archives and records practices contribute to slow violence that continues to unfold in colonialism's wake. Precarity and harm characterize many of the archival engagements in climate fiction, too, from dramatic

changes in the land, to resource and knowledge extraction repeating settler histories, to information enclosures that serve the wealthy at the expense of the commons. Archival practices can also enable strategies and tactics that resist slow violence: creating documentation, practicing kinship, solidarity, and intergenerational responsibility are all means of affirming the possibility of a future. This requires facing up to and refusing double binds between remembering and surviving, now and in the long term.

Neoliberal economic policies trickle down into archival practices through austerity budgeting and the impossible choices it forces upon archivists. As seen in the literature, this is the case for numerous archives with too few resources to adequately plan for disaster. The archival workers I interviewed describe how slow violence – mainly too much work with too few resources, experiencing climate disaster, and operating within political constraints – sensitizes them as climate advocates, while also placing them in double binds. Making claims through an evidence base of records is difficult when the mechanisms that regulate, produce, and maintain record keeping are underfunded or otherwise suppressed, falling into disrepair. Record keeping can further constrain the ability to act in these circumstances, opening marginalized people to hypervisibility, or simply because it's hard to document change from within.

Efforts to implement better climate practices often fail to challenge power relations in the field, or frame problems in ways that forestall meaningful action. Archival workers are trying to do principled work in often impossible circumstances, thanks to constraining working conditions and political obstacles to climate response. Advocating from inside and outside of the field at once leads them to constantly reposition, never settling in one stance from which to seek change.

### **6.1.3. What are archival workers' norms and expectations for making change?**

Key areas of debate in discourses about climate and archives include whether archives and archival workers matter in a crisis, and whether they're trustworthy. Mattering and trustworthiness are ongoing negotiations: processes, not properties, of archives. Many insist on archives being part of any serious, large-scale, long-term climate response, although they expect the change to come from different quarters. Some speak to policymakers, while others emphasize actions that can be individualized, or are already palatable within norms of the field. By contrast, several advocates propose ways to reorganize archives, clearly articulating both the alternative forms of organization and how to achieve them. As advocates deploy diverse, flexible tactics to fight enclosure and redistribute resources, current and historical records can support organized political action. However, equally significant are lessons from climate fiction concerning the hard political work needed to live, act, and make change collectively. To hold together means leaving no one behind, respecting autonomy within groups, and treating dissent as a teacher.

Both advocacy and archival practices begin with building theory from experience. In many voices, archival workers describe a shared model of how change happens in the field: new ideas entering from the margins as controversies, traveling through normative channels and spaces, becoming mainstream in a way that occludes the foregoing debates, and perhaps recurring in cycles without ever fully settling. Climate advocates in the archives field shift between positions as insiders and outsiders, perceiving or asserting themselves as one or the other at different times. This is part of finding a role within advocacy. Most who have participated in change-making, in or out of archives, testify to how such actions expand their capacity to act in solidarity.

#### **6.1.4. To what extent and in what ways do they act in community?**

Over six decades, hundreds of archival workers have produced the enunciatory community of “archivists concerned about climate change.” While they share a commitment that archives matter to climate response, it's the contradictions among their many voices that hold them together as an enunciatory community. Two key points of disagreement lie at the buzzing center. First, whether archives are primarily resources or obstacles to climate action. And second, to what extent archival climate responses should align with or resist power relations that organize the state of the field (and planet). Enunciatory communities experience and face up to double binds, finding creative responses to their situations by refusing the power relations of slow violence. They may exist in constant tension as communities, but nonetheless transmit a future ethics about how to survive, how to live, how to make change, and how to use this knowledge in the future. Perpetual motion between margins and center characterizes their experiences.

#### **6.2. Contributions of the research: For what? For whom?**

This dissertation contributes to archives praxis by mapping the working epistemologies of archival workers as climate advocates, linking the double binds that characterize their working conditions and climate advocacy to forms of slow violence that constrain what's possible. As the research design demonstrates, translating frameworks, strategies, and tactics across contexts can be effective tools of critique, shaking up archival norms and imaginaries for the purposes of making change.

There may be other ways to explain the findings in this study. For instance, readers might ask, *What are characteristics of climate advocacy that are related to advocates' being archival workers?* What aspects are specific to climate advocacy? What elements are specific to archival

work? Can the current research substantiate any such claims? There's a dynamic and growing body of research and action on the pursuit of social justice in, through, and despite of archives and archival work.<sup>756</sup> So it may be fitting to read archival workers' climate advocacy through those forms of activism in search of comparisons or alternative explanations. However, given the framework of advocacy that I'm adapting from Fortun – a multiplicity of often contradictory claims of harm and claims for redress, from above as well as below – it may also be appropriate to compare my interpretations of archival workers' climate actions with how other major changes in the field have come about. For instance, how does attempting to mitigate environmental impacts with technical changes compare with the progress of prior technological shifts in the field?<sup>757</sup> What did it take? Who did what? Such comparisons would acknowledge the reality that neither advocacy nor change necessarily serve social justice; but archival workers can draw lessons from what happened, regardless.

Another way to weigh the distinctiveness and import of archival workers' experiences as climate advocates is to compare my findings and argument with accounts of climate action and advocacy by other knowledge workers in other kinds of workplaces.<sup>758</sup> For instance, some

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756Punzalan and Caswell, and Wallace, review the development of this praxis. Ricardo L. Punzalan and Michelle Caswell, “Critical Directions for Archival Approaches to Social Justice,” *Library Quarterly* 86, no. 1 (January 2016): 24–42, <https://doi.org/10.1086/684145>; David A. Wallace, “Defining the Relationship between Archives and Social Justice,” ed. David A. Wallace et al. (London: Routledge, 2020), 22–51.

757Accounts of the computerization of archival work or early days of digital archiving could offer apt comparisons. Moving slightly outside the archives field, Tillman's study of integrated library system (ILS) maintenance and oral history work related to an early (1980s-90s) ILS at Penn State University each demonstrate how such investigations would be of use to library workers pursuing and implementing system changes today. Tillman describes skilled technical activities not only in the usual procedural prescriptions and details, but also in terms of affects, conflicts, and double binds – which too make up the textures of everyday work. Ruth Kitchin Tillman, “Indispensable, Interdependent, and Invisible: A Qualitative Inquiry into Library Systems Maintenance,” *College & Research Libraries* 84, no. 1 (January 2023): 121–36, <https://doi.org/10.5860/crl.84.1.121>.

758For example, Fortun's analysis of post-disaster advocacy could also describe the situations of advocates working in both technoscience and archives: “Like environmental politics elsewhere, Bhopal entangled the middle class in particularly personalized ways. Many were carriers of the expertise that had brought about and legitimated what was now labeled 'destructive development.' They also were the beneficiaries of such development, even while able to turn their expertise into a tool of opposition. Some activists admitted the compromise of their position, acknowledging their resemblance to those they challenged. They spoke the same language. They were experts in the very forums that they blamed for creating exploitation. The challenge was to use their resemblance

government employees and library workers share with archival climate advocates a sense that knowledge workers can be most useful in climate action by providing information and facilitating connections, such as between movements and formal organizations.<sup>759</sup> Other knowledge workers experience workplace barriers to climate action that are similar to what archivists report.<sup>760</sup> Finally, collective and individual actions by technology workers offer apt comparisons and contrasts for archival workers.<sup>761</sup> Tan et al. trace how U.S. tech workers “shifted from an occupational activism that relied on identification with a particular 'tech worker' identity that believed in serving the social good to a more traditional labor activism.”<sup>762</sup> My research indicates that archival workers' climate advocacy has so far dwelt squarely within the bounds of occupational activism, while among tech workers “many instances of labor activism took place at the end of a time series of actions that began with occupational activism” within a given

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as a means of resistance, subverting from within, forging an appropriate technology of expertise.” Fortun, *Advocacy After Bhopal*, 181-2.

759 Amanda Ball, “Environmental Accounting as Workplace Activism,” *Critical Perspectives on Accounting* 18, no. 7 (November 2007): 759–78, <https://doi.org/10.1016/j.cpa.2006.04.005>; Harri Sahavirta, “Showing the Green Way: Advocating Green Values and Image in a Finnish Public Library,” *IFLA Journal* 38, no. 3 (October 2012): 239–42, <https://doi.org/10.1177/0340035212455624>; Faten Hamad and Maha Al-Fadel, “Advocacy of the Sustainable Development Goals in Jordanian Academic Libraries,” *IFLA Journal* 48, no. 4 (December 2022): 492–509, <https://doi.org/10.1177/03400352211038300>; Nanna Kann-Rasmussen, “When Librarians Speak up: Justifications for and Legitimacy Implications of Librarians’ Engagement in Social Movements,” *Journal of Documentation* 79, no. 1 (2023): 36–51, <https://doi.org/10.1108/JD-02-2022-0042>.

760 Government workers with climate-related responsibilities in Malawi, Tanzania, and Zambia report that external pressures (from politicians, overseas donors, and other parties) constrain their offices' autonomy and decisions. Although all agree that climate response matters, and many report having individual autonomy in the workplace (albeit within strict hierarchies), nearly all consider insufficient staffing and budget to be the greatest hurdles in their work. Archival workers share similar testimonies about their working conditions (see chapters 3 and 5). Joanna Pardoe, Katharine Vincent, and Declan Conway, “How Do Staff Motivation and Workplace Environment Affect Capacity of Governments to Adapt to Climate Change in Developing Countries?,” *Environmental Science and Policy* 90 (December 2018): 46–53, <https://doi.org/10.1016/j.envsci.2018.09.020>.

761 Nishi Gautam and Edward J. Carberry, “Employee Activism in the High-Tech Sector: Exploring the Factors for Effective Institutional Change within Corporations” (36th European Group for Organizational Studies (EGOS) Colloquium: Organizing for a Sustainable Future: Responsibility, Renewal & Resistance, Hamburg, Germany, 2020); Tamara Kneese, “Climate Justice & Labor Rights Part I: AI Supply Chains and Workflows” (AI Now Institute, August 2, 2023), <https://ainowinstitute.org/general/climate-justice-and-labor-rights-part-i-ai-supply-chains-and-workflows>; Tamara Kneese, “Climate Justice & Labor Rights Part II: Labor Organizing and Environmental Justice in Tech, Past and Present” (AI Now Institute, August 3, 2023), <https://ainowinstitute.org/general/climate-justice-and-labor-rights-part-2-labor-organizing-and-environmental-justice-in-tech-past-and-present>.

762 JS Tan, Nataliya Nedzhvetskaya, and Emily Mazo, “Tech Worker Organizing: Understanding the Shift from Occupational to Labor Activism” (arXiv, July 28, 2023), 4.

company.<sup>763</sup> That archival climate advocates' experiences and perspectives aren't all unique doesn't make them unimportant. Likewise, sharing workplace constraints and advocacy approaches with library, government, and tech workers doesn't mean that specific working conditions or methods of advocating should matter less to archival workers. Instead, my study both describes the environmental pasts, presents, and futurities of archival workers, while also connecting them with potential allies and concrete ways to move forward in climate action.

A dissertation should assess whether or not existing frameworks are capable of answering the big questions. In fact, there are plenty of *answers* to be found in archival literature, climate fiction, and archival practices about the significance of climate change, what it means for archival work, the need to respond, and how to do so. Archival workers have dreamed up numerous new worlds, to paraphrase Fortun.<sup>764</sup> However, as participants in the interview study emphasize, knowledge and answers themselves make little difference in everyday change-making, if they don't also confront the material conditions of archival work and the power relations that perpetuate those conditions. In that sense, the framework I put forward here complements existing documentation of archival workers as climate advocates. A large-scale effort like climate response requires everyone and everything, never harmonized or solidified, brought together in shared experiences of slow violence and double binds, rather than trying to unite around shared values and visions for the future.<sup>765</sup> Given the political acuity of the archival workers I interviewed, this conclusion may come as no surprise.

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<sup>763</sup>Tan et al. offer a playbook: "To do this effectively, however, requires organizers to envision occupational activism as part of their longer-term goal of labor activism. This mechanism works as follows: an issue campaign (which takes the form of occupational activism) attracts the interest of workers who align with the position put forward by the organizers, thus growing the network of connected workers in that workplace." Tan et al., "Tech Worker Organizing," 23, 28.

<sup>764</sup>Fortun, *Advocacy After Bhopal*, 13.

<sup>765</sup>Fortun similarly describes the inherent uncertainty and oscillation within advocacy at all levels: "Idealized portraits of advocacy represent a certainty that is resolutely at odds with how environmental problems materialize on the ground, in continuing negotiations over what is real, what is past, and what is to come." Fortun, *Advocacy After Bhopal*, 52.

Research should be useful; the question is always for what and for whom? The imperative to pursue what's "practical" in LIS research leaves unmarked and unquestioned such categories as common sense, universality, normalcy, plain language, and "the utilitarian transmission of content," that actually co-constitute relations of domination.<sup>766</sup> Present-day structures of "useful" knowledge, education, and production – often unmarked but influential within archival work – emerge from historical differentiations of class, race, and colonizer/colonized.<sup>767</sup> So this study has attempted to redefine what's practical and useful and for whom. Recognizing everyday practices as forms of theory-building is a key tenet here.<sup>768</sup> Another is embracing what Ahmed calls "queer use," or the refusal to use or be useful in the approved way: "Those who refuse the instructions know how they work."<sup>769</sup> Archival climate advocates' oscillating insider-outsider positions suggest a power in using one's knowledge of the knowledge, in order to act otherwise.

The rest of the chapter looks at how this study can be an organizing tool for archival workers. Read it with others, mapping the double binds and enunciatory communities in your workplace and broader environment, identifying where and how to intervene. I would be pleased if people used the dissertation as an interlocutor for the advocacy they're involved in, or as a means to build bridges between efforts, in and out of the settings in which they do archival work. I also encourage archival workers to disagree with the arguments, then get together and build a different, better analysis of the terrain of climate advocacy in the field. If honestly assessing where I stand and the relationships that are immediately at hand for making change, this dissertation has the most to say to other U.S.-based archival workers.

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<sup>766</sup>Hudson, "Whiteness of Practicality," 212.

<sup>767</sup>Sara Ahmed, *What's the Use? On the Uses of Use* (Durham, NC: Duke University Press, 2019).

<sup>768</sup>Popowich, "Onus of Explanation"; Hudson and Rochat, "Racial Capitalism and Knowledge Production."

<sup>769</sup>Ahmed, *What's the Use?*, 204.

Within that scope, this study offers a conceptual toolkit for breaking open common sense around archives and advocacy. Even just to understand that one's working conditions and climate change are each the outcomes of political processes and resource conflicts could be an important reframing for many archival workers, just like it has made a difference for me. As the climate fiction and interview studies each show, political engagement and archival practices are embedded in everyday life.<sup>770</sup> This project encourages archival workers to understand every condition of their practice as advocacy in tension with other advocacy from above, outside, and below. I highlight instance after instance of everyday theories and methodologies drawn from archival workers' experiences, that both complement and contradict my claims. The real test of this work is yet to come in how people take it up, and whether it proves relevant to their aims and experiences.

### **6.3. Climate advocacy norms for archival workers**

A critical archival studies project should propose not only future interventions but also norms for achieving them.<sup>771</sup> Having noted several times the many known interventions that are already available, I'll instead conclude with three norms for archival workers' climate advocacy, based on the findings and experience of doing this research: using the knowledge base, building power, and embracing affect.

#### **6.3.1. Using the knowledge base**

The archives fields already has much to say about curating climate records; using records for climate- and environment-related purposes; evaluating archival work; designing systems; doing

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<sup>770</sup>Similarly, Hedva argues that protest can be “internalized, lived, embodied, suffering, and no doubt invisible,” not least because the impacts of systems of oppression manifest in bodyminds. Johanna Hedva, “Sick Woman Theory,” *Mask Magazine*, January 2016.

<sup>771</sup>Caswell et al., “Critical Archival Studies.”

archival politics; recognizing multiple ways of knowing and many ways to do archives; and disaster response and recovery. I wrote a critical literature review (chapter 3) to recover and organize this knowledge in a way that illustrates the different forms of advocacy it enacts, and the slow violence and double binds to which advocates respond. This is but one way to organize and engage with this knowledge; the point is to do so. And, as interviews with archival workers demonstrate (chapter 5), political will is a far greater obstacle to action than lack of information.

### 6.3.2. Building power

What concrete steps are necessary to make use of this base? Building alliances and making climate demands of employers and professional organizations are necessary mechanisms but difficult to use, in part because archival workers and organizations operate in different policy spaces from labor unions and climate groups.<sup>772</sup> Dedicated work is necessary to bridge political spheres, identify apt targets, and apply pressure.<sup>773</sup> While climate policies at many levels often focus on consumer behavior, intervening in production would be more effective – but what would this mean in the archives field?<sup>774</sup> Many archival workers may not question (or perhaps not comprehend) the systems of production in which they participate; or they may primarily recognize their modes of participating as other-than-labor.<sup>775</sup> Reframing archives climate action

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772Here I'm extending a point that Obach makes regarding organizations in the labor and environmental movements. In the U.S., furthermore, the structure of nonprofit tax law requires tax-exempt organizations to separate their service provision and lobbying functions, discouraging alliances between groups across exemption types. So the Society of American Archivists (SAA), a 501(c)(6) organization or business league, has incentives to approach with caution or carefully keep separate any activities that could overlap with the work of organizations in other categories: charities, social welfare, agriculture and horticulture, and labor. Brian Obach, "Political Opportunity and Social Movement Coalitions: The Role of Policy Segmentation and Nonprofit Tax Law," in *Strategic Alliances: Coalition Building and Social Movements*, ed. Nella Van Dyke and Holly J. McCammon (Minneapolis, MN: University of Minnesota Press, 2010), 197–218.

773SAA's Committee on Public Policy (COPP) fulfills some of these functions but, given the tax structures in which SAA exists (see note 773), is necessarily limited in scope to mobilizing members to take political action as individuals.

774Nora Räthzel and David Uzzell, "Trade Unions and Climate Change: The Jobs versus Environment Dilemma," *Global Environmental Change* 21 (2011): 1215–23, <https://doi.org/10.1016/j.gloenvcha.2011.07.010>.

775For instance (as I note in chapter 3), archival workers writing about climate and environment often frame

through a model of mass organizing could be generative: such a model emphasizes building power to win by growing numbers, developing individual and organizational capacity, and testing that capacity in a structured way.<sup>776</sup> Certain capacity-building is already happening, as seen in how archival workers build theory through experience, and find motivation and determination through collectivity.

An important tactic in the face of these challenges is to re-purpose existing networks and spaces, whether bringing climate concerns into professional communities of practice or joining archivists more closely with the communities in which they live and work. Organized labor (union and otherwise) offers a growing number of examples for this kind of climate action.<sup>777</sup> Transit workers, janitors, letter carriers, environmental agency workers, university teachers, and delivery drivers have used the tools of labor advocacy – research, public statements, policy platforms, protests, grievances, strike votes, and strikes – in their fight to reduce the environmental impacts of their work and mitigate climate-related dangers to workers.<sup>778</sup>

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possible interventions as matters of more ethical consumption (of supplies, energy, and natural resources). Lee's argument that LIS education recruits library workers into alignment with professional-managerial class interests, obscuring relations of power and production, is relevant here as well. For some archival workers (as chapter 5 suggests), experiencing climate and workplace disasters (or both) leads them to question this alignment and develop a different analysis of the field. Yoonhee Lee, "Being Taught to Be Professionals vs. Workers: Critical Consciousness and LIS Education" (Critical Librarianship & Pedagogy Symposium, Tuscon, AZ, 2022), <https://www.youtube.com/watch?v=KptBLEiq96I>.

<sup>776</sup>Jane McAlevey, *No Shortcuts: Organizing for Power in the New Gilded Age* (New York: Oxford University Press, 2016).

<sup>777</sup>Examples of collective climate action by non-union workers matter especially for the archives field: a 2021 census of U.S. archivists found that just 17% of respondents are union members. Skinner and Hulbert, "A\*CENSUS II All Archivists Survey Report."

<sup>778</sup>Unionists have used a range of approaches, from cooperation with management to organized militancy, to pursue climate action on the job. From 2008 to 2010, a major UK trade union federation facilitated labor-management collaboration on "GreenWorkplaces" initiatives. In Australia, more than 130 "green clauses" in single-employer collective bargaining agreements specify joint commitments and worker consultation on environmental programs related to the workplace and its impacts. Turning to recent North American examples, New York transit unions joined calls for a Green New Deal in 2012, after the devastation of Hurricane Sandy. In 2019, higher education unionists went on strike to join the Montreal climate march. In 2020, SEIU Local 26, representing 4,000 janitors in Minneapolis, struck corporate employers for "green cleaning techniques" and worker/community seats at the table "to discuss even more aggressive measures to lower emissions" – alongside other demands like wage increases, standardized paid sick days, affordable health insurance, sexual harassment policies, and affordable housing. Rank-and-file U.S. Postal Service (USPS) workers have called on their unions to expand climate demands including air quality standards and electric vehicles. In 2021, U.S. EPA workers organized against fossil

Movements linking environmental security with livelihoods have long mobilized alternatives to capitalistic assessments of worth, drawing on languages and systems of valuation like spirituality or religion, traditional rights to land, the preservation of cultural methods of stewardship, fair access and distribution, ecological debt, and alternative modernities.<sup>779</sup> The ability to “impose a language of valuation” upon a resource conflict, and thereby “simplify complexity,” is itself a form of power.<sup>780</sup> Many of these tools are, or could be, available to archival workers.

Building power to make the changes that archival climate advocates call for is a matter of learning to see, hear, think, and dream differently along with gathering numbers, keeping lists, and building strategy. To imagine and act otherwise requires confronting and refusing the double

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fuel investments in the federal/military pension plan to which they belong. In 2022, the International Brotherhood of Teamsters called attention to spiking heat-related illnesses among UPS delivery drivers. Climate change and records power intersect in the case of letter carriers: In 2023, the National Association of Letter Carriers (NALC) submitted several thousand grievances alleging instances where USPS managers failed to provide mandatory heat-related job training, but falsified records that the training had taken place. Caleb Goods, “Climate Change and Employment Relations,” *Journal of Industrial Relations* 59, no. 5 (November 2017): 670–79, <https://doi.org/10.1177/0022185617699651>; Jenny Brown, “Workers in the Northeast Come Face to Face with Climate Change,” *Labor Notes*, October 31, 2012, <https://labornotes.org/2012/10/workers-northeast-come-face-face-climate-change>; Alain Savard, “How Seven Thousand Quebec Workers Went on Strike against Climate Change,” *Labor Notes*, October 25, 2019, <https://labornotes.org/2019/10/how-seven-thousand-quebec-workers-went-strike-against-climate-change>; Iris Altamirano, Greg Nammacher, and Priya Dalal-Whelan, “Lessons from the First Union Climate Strike in the U.S.,” *Labor Notes*, April 30, 2020, <https://labornotes.org/2020/04/lessons-first-union-climate-strike-us>; David Yao, “Can Postal Vehicles Help Us Fight Climate Change?,” *Labor Notes*, April 28, 2021, <https://labornotes.org/blogs/2021/04/can-postal-vehicles-help-us-fight-climate-change>; Malachi Dray, “Letter Carrier: Air Quality Is a Union Issue,” *Labor Notes*, August 24, 2021, <https://labornotes.org/blogs/2021/08/letter-carrier-air-quality-union-issue>; Saurav Sarkar, “Get Fossil Fuels Out of Our Pension, Say Environmental Protection Workers,” *Labor Notes*, June 3, 2021, <https://labornotes.org/blogs/2021/06/get-fossil-fuels-out-our-pension-say-environmental-protection-workers>; Sarah Jaffe and Michelle Chen, “Delivery Workers Stuck in Searing Heat,” *Belabored*, August 5, 2022, <https://www.dissentmagazine.org/blog/belabored-delivery-workers-searing-heat/>; Ariel Wittenberg, “A Deadly Delivery Highlights ‘Falsified’ Heat Records at USPS,” *POLITICO*, December 11, 2023, <https://www.politico.com/news/2023/12/11/usps-major-heat-deaths-00128875>.

779Martinez-Alier writes of ecological conflicts, “Thus, despite ‘the unwillingness or inability of authorities to understand messages encoded in terms other than those of the dominant economic discourse’, the idioms in which ecological distribution conflicts are fought are often alien to the market (or fictitious market): the ecological value of ecosystems, the respect for sacredness, the urgency of livelihood, the dignity of human life, the demand for environmental security, the need for food security, the defence of cultural identity, of old languages and of indigenous territorial rights, the aesthetic value of landscapes, the injustice of exceeding one’s own environmental space, the challenge to the caste system, and the value of human rights.” Regarding ecological debt, “the point is not exchanging external debt for protection of Nature, as has been done in some anecdotal cases. On the contrary, the point is to consider that the external debt from south to north has already been paid on account of the ecological debt the north owes to the south, and to stop the ecological debt from increasing any further.” Martinez-Alier, *Environmentalism of the Poor*, 150, 233.

780Martinez-Alier, *Environmentalism of the Poor*, 271.

bind. As research about enunciatory communities shows (chapter 1), facing up to double binds activates creative, flexible, and vital advocacy through which to refuse constraints on futurity.<sup>781</sup> To that end, this research models a method for analyzing advocacy claims both across a field and in specific situations, identifying deep needs and targeting false choices. Given the urgent intersections of climate and labor, building power among archival workers requires refusing the either-or between safe, fair working conditions and a just climate response. Archives are far from the only field and workplace in which workers ask “whether contemporary forms of work can advance environmental standards, or the climate-centered corollary of that question: whether and under what conditions green jobs will be equitable.”<sup>782</sup> Meanwhile, evidence from industry shows that workers “are right to fear that green jobs may be terrible jobs.”<sup>783</sup> A diverse and contradictory community of archival workers both questions and fears for the future of archives,

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781Here, I'm also building on Fortun's argument about redefining the terms of advocacy, particularly around how impacts of advocacy count, are counted, and are countable. In this passage, she describes the senses of advocacy and impact that she then refuses, in the process of conducting the Bhopal study and developing theory around enunciatory communities: “Nothing much we did in Bhopal counts. The legal proceedings have generated scant resources for victims and have led to a plan of distribution that fosters schism within local communities. No liability has been established, and the structure of the case could set an insidious precedent for handling mass torts, particularly in the Third World. Attempts to build alternative social forms have been abandoned, or exhausted of critical momentum. In sum, most of what we advocated has not materialized. Like disaster, our advocacy can be read as an externality, without register in recognized accounting practice. I refuse this accounting, as a matter of habit as well as of method. Victims insist that I 'Remember Bhopal.' Persistent refusal of conventional accounting practices and their strategies of exclusion is key. We must refigure what 'counts,' granting relevance to indicators that disrupt glossy promises of a harmonized global order. We must write in recollections of a past that shape a future more conversant with harsh opposition. The challenge is to translate between science and social progress, between law and justice, between democratic ideals and everyday pluralism. There is work in both scholarship and direct political engagement. Neither is sufficient; both are crucial.” Fortun draws methodological conclusions about the role of anthropologists in advocacy, that could equally apply to U.S. archivists as climate advocates. However, although her analysis of disaster engages with her own role and experiences as both ethnographer and activist, she scopes academic labor out of the wide-ranging account. So one way in which I depart from Fortun is in arguing that accounting for and resisting slow violence must also (and more fully) account for the places where, and conditions in which, we work. Fortun, *Advocacy After Bhopal*, 175.

782Natasha N. Iskander and Nichola Lowe, “Climate Change and Work: Politics and Power,” *Annual Review of Political Science* 23 (May 2020): 122.

783Joe Uehlein, “Making Climate Protection Worker-Friendly,” *Labor Notes*, June 16, 2010, <https://labornotes.org/2010/06/making-climate-protection-worker-friendly>; Luis Feliz Leon, “Will the Clean Energy Auto Economy Be Built on Factory Floors Riddled With Toxic Chemicals and Safety Hazards?,” *In These Times*, August 30, 2023, <https://inthesetimes.com/article/ultium-cells-uaw-gm-ford-stellantis-electric-vehicles>.

many insisting that archival work be part of large-scale climate response; but there's no “just transition” without organizing. Archival responses to climate change will be meaningless without facing up to the contingency, precarity, and overwork that characterize archival workers' experiences today; or the historical and ongoing harms of colonialism, austerity, global inequity, and slow violence in which archival work is often complicit.<sup>784</sup>

### 6.4.3. Embracing affect

Finally, the affects of climate advocacy matter. Climate-related emotions are known: anger at the inaction of world leaders that spikes during the annual UN Climate Change Conference, or Conference of the Parties (COP), grief for losses suffered and those yet to come. Climate fiction writers capture this well (see chapter 4). Affects are more than feelings: they encompass emotions, relationships, power, desires, and all that moves people, expanding their capacities to face up to double binds and to act. Acknowledging harms is necessary, but only a beginning.<sup>785</sup> In resistance to slow violence that displaces and dispossesses, affective bonds hold people in place with one another; with the land, air, and water and all others who inhabit them; and with once and future generations.

Many of the struggles in which archival workers engage as climate advocates – living through one disaster and dreading the next, piecing together evidence to make claims in a hostile system, doing their best under dire resource constraints – leave them physically and emotionally

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<sup>784</sup>In September 2022, I wondered on social media how soon to expect job titles like “Archivist/Librarian for Climate Adaptation”: organizations acknowledging the gravity of the situation by making it one (1) person's job. The following January, the British Library posted just such an ad. In contrast, Tansey's speculative policy proposal, *A Green New Deal for Archives*, calls for abundant public funding for U.S. archives and records agencies, mass hiring of archival workers, and large-scale efforts to document climate change by watershed. Archival workers' political participation is necessary *now*, to ensure an economically and ecologically just future in which archives continue to matter. At a basic level, I'm grateful for the ambition of these ideas.

<sup>785</sup>As Eda cautions, “trauma cannot lead and sustain a social movement.” Haruki Eda, “Queer Korean Diaspora: An Ethnography of Geopolitics” (PhD, New Brunswick, NJ, Rutgers University, 2022), 20.

exhausted, questioning the possibility of just futures. But as interviewees testify, collective action can be a source of hope that motivates even more organizing, even when the outcomes of advocacy are hard to see. I mention above the need to draw upon languages and frameworks that are meaningful and resonant for *participants*, in order to build power and support. This departs from the usual model of archival advocacy: shaping dire material needs into formats that will be familiar, comfortable, and appealing to decision-makers who disburse or withhold funds.

As numerous interviewees stress, it's essential that archival workers connect climate to every other concern in the field. Recognizing interconnectedness refuses the politics-free workplace, the fragmentation of disciplines and interest groups, and the idea that one urgent need must get in line either before or behind the others. Here I emphasize again the vitality and necessity of enunciatory communities, whose internal tensions and contradictions couldn't be reconciled even if advocates would only muster the right words. Action matters. Conditions and coalitions matter: given the uneven distribution and attenuated capacities of archival workers, it's clear that they alone can't make the changes they want or need.

Affect shapes the argument: I'm not ashamed to admit that researching and writing this dissertation brought out a lot of anger, in ways that may seem petty or small. For instance, I concluded from reviewing decades of my employer's actions that what it values most about its archives is a backlog. All resourcing decisions and planning converged in accumulating unaccounted-for materials and incomplete tasks at every stage of managing records, extending deep into the future – truly an “always already occupied space.”<sup>786</sup> Carefully protected, the backlog pushes all else out of the realm of the possible, mortgages time that could be dedicated otherwise. It felt as though this was all that archival workers should or would ever have to offer.

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<sup>786</sup>Bahng, *Migrant Futures*, 12.

Also while conducting this research, I experienced two separate injuries that affected my vision, balance, and cognition for weeks. I seriously questioned how long I could continue to work as a digital archivist (“Physical demands: Ability to work extensively at a computer”), research, or stay in the archives field at all. These evocations of a narrowing future dovetailed with observing how “always-already” talk has a conservative, demobilizing, demoralizing effect. This is the oft-deployed claim that archival work has always enacted, or is already perfectly suited for, meeting a significant challenge from the margins of the field: anti-racism, disability justice, social justice, climate response. We're already doing it; there's no need to change. I channeled rage about these dynamics into some joke flyers, which is praxis.



*Illustration 4. Deploying our backlogs for climate adaptation.*

Nothing I experienced while doing this research was unusual. Many climate advocates are at different times just as angry, despairing, hopeful, grateful, and troubled; as is everyone fighting for life and livelihood against the slow violence of environmental damage and dispossession. Climate change presents archival workers with one impossible choice after another. Still – like the archival climate advocates I've learned from – they choose to act.

## References

- Aarons, John A. "Contingency and Response Management: Lessons from Hurricane Gilbert." In *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, edited by Hyacinth Brown, 39–43. Kingston, Jamaica: Jamaica Library Association, 1989.
- . "Guidelines for Salvaging Water-Damaged Materials." In *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, edited by Hyacinth Brown, 22–25. Kingston, Jamaica: Jamaica Library Association, 1989.
- Abbey, Heidi N. "The Green Archivist: A Primer for Adopting Affordable, Environmentally Sustainable, and Socially Responsible Archival Management Practices." *Archival Issues* 34, no. 2 (2012): 91–115.
- Abramsky, Kolya, Stefan Gsänger, and Elizabeth Bartram. "The Challenge of Archiving the Global Modern Wind Energy Sector." *Comma* 2021, no. 2 (2023): 317–30. <https://doi.org/10.3828/coma.2021.29>.
- Adamson, George. "Private Diaries as Information Sources in Climate Research." *Wiley Interdisciplinary Reviews: Climate Change* 6, no. 6 (December 2015): 599–611. <https://doi.org/10.1002/wcc.365>.
- Addis, Matthew. "Is Digital Preservation Bad for the Environment?" *Digital Preservation Coalition* (blog), November 22, 2021. <https://www.dpconline.org/blog/is-digital-preservation-bad-for-the-environment>.
- . "What Is the Carbon Footprint of Large-Scale Global Digital Preservation?" *Digital Preservation Coalition* (blog), October 23, 2023. <https://www.dpconline.org/blog/blog-matthew-addis-ipres23>.
- Adger, W. Neil, Jon Barnett, Katrina Brown, Nadine Marshall, and Karen O'Brien. "Cultural Dimensions of Climate Change Impacts and Adaptation." *Nature Climate Change* 3, no. 2 (2013): 112–17. <https://doi.org/10.1038/nclimate1666>.
- Afacan, Yasemin. "Sustainable Library Buildings: Green Design Needs and Interior Architecture Students' Ideas for Special Collection Rooms." *Journal of Academic Librarianship* 43, no. 5 (September 2017): 375–83. <https://doi.org/10.1016/j.acalib.2017.07.002>.
- Ahmed, Sara. *The Cultural Politics of Emotion*. New York: Routledge, 2004.
- . *What's the Use? On the Uses of Use*. Durham, NC: Duke University Press, 2019.
- Alagna, Laura, Keith Pendergrass, Walker Sampson, and Tim Walsh. "Archivists on the Issues: Creating Environmentally Sustainable Digital Preservation: A Workshop." *Issues & Advocacy* (blog), April 2, 2020. <https://issuesandadvocacy.wordpress.com/2020/04/02/archivists-on-the-issues-creating-environmentally-sustainable-digital-preservation-a-workshop/>.
- Alaniz, Des. "Reflections on Temporary Appointments and Innovation/Diversity Culture in Libraries and Archives." *Collective Responsibility: National Forum on Labor Practices for Grant-Funded Digital Positions* (blog), August 14, 2019. <http://laborforum.diglib.org/2019/08/14/reflections-on-temporary-appointments-and-innovation-diversity-culture-in-libraries-and-archives/>.
- Ali, Zara, and Ashleigh Morris. "Report: 'The Working Conference on Regional Approaches on Disaster Recovery and Heritage Preservation', Sint Maarten (30 July – 2 August, 2018)." *Universiteit Leiden* (blog), August 27, 2018. <https://www.universiteitleiden.nl/nexus1492/news/report-%E2%80%9Cthe-working->

[conference-on-regional-approaches-on-disaster-recovery-and-heritage-preservation-%E2%80%9D-sint-maarten-30-july-%E2%80%93-2-august-2018.](#)

- Allain, Céline, and Sophie Guérinot. "Preservation Storage in a Flood Damage Mitigation Effort at the National Library of France." *IFLA Journal* 48, no. 2 (June 2022): 289–92. <https://doi.org/10.1177/03400352211037703>.
- Allan, Rob, Georgina Endfield, Vinita Damodaran, George Adamson, Matthew Hannaford, Fiona Carroll, Neil Macdonald, et al. "Toward Integrated Historical Climate Research: The Example of Atmospheric Circulation Reconstructions over the Earth." *Wiley Interdisciplinary Reviews: Climate Change* 7, no. 2 (April 2016): 164–74. <https://doi.org/10.1002/wcc.3794>.
- Allen, Marie. "Crossing Boundaries: Intergovernmental Records Cooperation, 1987-1997." *The American Archivist* 60, no. 2: Special Issue on State Archival Programs (Spring 1997): 216–33. <https://doi.org/10.17723/aarc.60.2.f2q1641q4271286w>.
- Almeida, Nora, and Jen Hoyer. "The Living Archive in the Anthropocene." *Journal of Critical Library and Information Studies* 3, no. 1: Libraries and Archives in the Anthropocene (2020). <https://doi.org/10.24242/jclis.v3i1.96>.
- Altamirano, Iris, Greg Nammacher, and Priya Dalal-Whelan. "Lessons from the First Union Climate Strike in the U.S." *Labor Notes*, April 30, 2020. <https://labornotes.org/2020/04/lessons-first-union-climate-strike-us>.
- Altenhöner, Reinhard, and Jakob Nadal. "Tāhuhu: Preserving the Nation's Memory Programme: An Interview with Peter Whitehead and Hinerangi Himiona." *IFLA Journal* 48, no. 2: Special Issue: Preservation storage and curation strategies (June 2022): 267–74. <https://doi.org/10.1177/03400352221093476>.
- Amarasiri, Upali. "Rising from the Wreckage: Development of Tsunami-Affected Libraries in Sri Lanka." *IFLA Journal* 31, no. 4 (December 2005): 307–14. <https://doi.org/10.1177/0340035205061383>.
- Ameel, Lieven. "Agency at/of the Waterfront in New York City: *Vision 2020* and *New York 2140*." *Textual Practice* 34, no. 8 (2020): 1327–43. <https://doi.org/10.1080/0950236X.2019.1581250>.
- Amenu-Kpodo, Norma, Patricia Dunn, Verna George, and Janet McCallum. "Disaster Preparedness in Some Jamaican Libraries: Results of a Pre-Hurricane Gilbert Survey." In *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, edited by Hyacinth Brown, 31–38. Kingston, Jamaica: Jamaica Library Association, 1989.
- Anasi, Stella Ngozi, Ahiaoma Ibegwam, and Stella Olubukunmi Oyediran-Tidings. "Preservation and Dissemination of Women's Cultural Heritage in Nigerian University Libraries." *Library Review* 62, no. 8/9 (2013): 472–91. <https://doi.org/10.1108/LR-11-2012-0126>.
- Anderson, Bethany, Sandi Caldrone, Joshua Henry, Heidi Imker, Hoa Luong, Kelli Trei, and Sarah Williams. "Cultivating the Scientific Data of the Morrow Plots: Visualization and Data Curation for a Long-Term Agricultural Experiment." In *Proceedings of the 18th International Conference on Digital Preservation 2022*, 202–7. Glasgow, Scotland: Digital Preservation Coalition, 2022. <https://doi.org/10.7207/ipres2022-proceedings>.
- Anderson, Bethany, Sandi L. Caldrone, Joshua K. Henry, Heidi J. Imker, Andrew J. Margenot, and Sarah C. Williams. "Publishing Agricultural Data from the Morrow Plots: The Value and Logistics of Preserving a Long-Term Research Experiment." In *19th International Conference on Digital Preservation 2023*, 127–36. Champaign-Urbana, IL, 2023.

- Anderson, Bethany, and Erik A. Moore. “Documenting Environmental and Natural History: The Role of Archivists in Stewarding Archives, Specimens, and Data in Settler Institutions.” Virtual Conference, 2022.
- Anderson, Kevin, and Mark Ormsby. “NARA’s Path Forward on Archival Environments and Climate Change.” Washington, DC, 2023.  
[https://whova.com/portal/saar\\_202307/videos/4YjMzkjMycjM/](https://whova.com/portal/saar_202307/videos/4YjMzkjMycjM/).
- Anenene, Ese Eunice, and Olawale Oyewole. “Towards Ensuring the Realization of Sustainable Development Goal 16 by Governments in Nigeria: The Role of the Archives.” *Comma* 2019, no. 1 (June 2019): 29–36. <https://doi.org/10.3828/comma.2019.1.3>.
- Antonello, Alessandro, and Mark Carey. “Ice Cores and the Temporalities of the Global Environment.” *Environmental Humanities* 9, no. 2 (November 2017): 181–203.  
<https://doi.org/10.1215/22011919-4215202>.
- Aoki, Reiko. “Collection Development on Women’s Earthquake Disaster Experiences and Support Activities in Japan.” Kuala Lumpur, Malaysia: International Federation of Library Associations and Institutions, 2018. <https://library.ifla.org/id/eprint/2340>.
- Appel, Rachel. “DataRescue Philly: Environmental Data Archiving, Workflows, and Description.” *Project\_arcc* (blog), January 26, 2017.  
<https://projectarcc.org/2017/01/26/datarescue-philly-environmental-data-archiving-workflows-and-description/>.
- “Archival Workers Emergency Fund,” n.d. <https://awefund.wordpress.com/>.
- Artim, Nicholas. “Cultural Heritage Fire Suppression Systems: Alternatives to Halon 1301.” *Western Association for Art Conservation Newsletter* 15, no. 2 (May 1993): 34–36.
- Asamoah, Catherine, Harry Akussah, and Adams Musah. “Recordkeeping and Disaster Management in Public Sector Institutions in Ghana.” *Records Management Journal* 28, no. 3 (2018): 218–33. <https://doi.org/10.1108/RMJ-01-2018-0001>.
- Ashley-Smith, Jonathan. “Climate for Culture: Report on Damage Functions in Relation to Climate Change,” October 27, 2013. [https://www.climateforculture.eu/index.php?inhalt=download&file=pages/user/downloads/project\\_results/D\\_04.2\\_final\\_publish.pdf](https://www.climateforculture.eu/index.php?inhalt=download&file=pages/user/downloads/project_results/D_04.2_final_publish.pdf).
- Asociación Latinoamericana de Archivos. “Archive Buildings in a Tropical Climate and with Low Resources.” ICA Study 17. Paris: International Council on Archives, 2005.  
<https://www.ica.org/en/ica-study-n%C2%B017-archive-buildings-tropical-climate-and-low-resources>.
- Asogwa, Brendan Eze, and Ifeanyi Jonas Ezema. “Freedom of Access to Government Information in Africa: Trends, Status and Challenges.” *Records Management Journal* 27, no. 3 (2017): 318–38. <https://doi.org/10.1108/RMJ-08-2015-0029>.
- Atkinson, Megan. “The Tornado Recovery Project at Tennessee Tech: A Case Study in Community Disaster Assistance by an Academic Archives.” *Society of Florida Archivists Journal* 3, no. 1 (May 2022): 1–16.
- Aucoin, Sr. Jane. “Sisters of St. Joseph in New Orleans.” *Southwestern Archivist*, November 2005.
- Avery, Amanda. “Our Dark Materials: A Steampunk Future for Libraries?” New York, NY, 2017.  
<http://credo.library.umass.edu/view/full/mums1010-s08-i008>.
- Ayala-González, Hilda Teresa. Archives at the Intersection of Postcolonialism and Climate Change: Reflections from Puerto Rico Post-Maria with Hilda Teresa Ayala-González. Interview by Amye McCarther, January 30, 2019. <https://medium.com/metropolitan-archivist/archives-at-the-intersection-of-postcolonialism-and-climate-change-bcbcc800b1f5>.

- . “Puerto Rico’s Libraries, Archives and Museums Road to Recovery: A Timeline of Events After Hurricane Maria.” Washington, DC, 2018.
- . “Puerto Rico’s Libraries, Archives and Museums Road to Recovery: A Timeline of Events after Hurricane Maria,” May 4, 2019. <https://scalar.usc.edu/works/prlamrecovery/index>.
- Badgley, Kerry, Margaret J. Dixon, and Paulette Dozois. “In Search of the Chill: Access to Information and Record-Keeping in the Government of Canada.” *Archivaria* 55 (Spring 2003): 1–19.
- Bahng, Aimee. *Migrant Futures: Decolonizing Speculation in Financial Times*. Durham, NC: Duke University Press, 2018.
- Baillot, Anne. *From Handwriting to Footprinting: Text and Heritage in the Age of Climate Crisis*. Cambridge, UK: Open Book Publishers, 2023. <https://doi.org/10.11647/OBP.0355>.
- Baker, Karen S., and Lynn Yarmey. “Data Stewardship: Environmental Data Curation and a Web-of-Repositories.” *International Journal of Digital Curation* 2, no. 4 (2009): 12–27. <https://doi.org/10.2218/ijdc.v4i2.90>.
- Baker, Mike. “The Archival Climate History Survey (ARCHISS).” In *Access to Archives—Legal Aspects*, 119–20. Edinburgh, Scotland: International Council on Archives, 1997.
- Baker, Timothy C. *Writing Animals: Language, Suffering, and Animality in Twenty-First-Century Fiction*. Cham, Switzerland: Palgrave Macmillan, 2019.
- Ball, Amanda. “Environmental Accounting as Workplace Activism.” *Critical Perspectives on Accounting* 18, no. 7 (November 2007): 759–78. <https://doi.org/10.1016/j.cpa.2006.04.005>.
- Ballestero, Andrea. *A Future History of Water*. Durham, NC: Duke University Press, 2019.
- Balogun, Tolulope. “Digitization of Indigenous Knowledge Systems in Africa: The Case of South Africa’s National Recorded System (NRS).” *Records Management Journal* 33, no. 1 (2023): 88–102. <https://doi.org/10.1108/RMJ-10-2022-0029>.
- Balogun, Tolulope, and Trywell Kalusopa. “A Framework for Digital Preservation of Indigenous Knowledge System (IKS) in Repositories in South Africa.” *Records Management Journal* 31, no. 2 (2021): 176–96. <https://doi.org/10.1108/RMJ-12-2020-0042>.
- Banda, Fackson. “Policy Development for the Preservation of Documentary Heritage Through Disaster Risk Reduction.” In *Preservation of Documentary Heritage through Policy Development and Capacity Building*, 27–29. Paris: UNESCO Memory of the World (MoW) Programme, 2022. <https://unesdoc.unesco.org/ark:/48223/pf0000380655>.
- Bankole, Olubanke M. “A Review of Biological Deterioration of Library Materials and Possible Control Strategies in the Tropics.” *Library Review* 59, no. 6 (2010): 414–29. <https://doi.org/10.1108/00242531011053931>.
- Barad, Karen. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham, NC: Duke University Press, 2007.
- . “No Small Matter: Mushroom Clouds, Ecologies of Nothingness, and Strange Topologies of Spacetime.” In *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, edited by Anna Lowenhaupt Tsing, Heather Anne Swanson, Elaine Gan, and Nils Bubandt, G103–20. Minneapolis, MN: University of Minnesota Press, 2017.
- Barclay, Bridgette. “‘My Heart Slowly Cracks’: Making Kin and Living through Extinction in Erdrich’s *Future Home of the Living God*.” In *Fiction and the Sixth Mass Extinction: Narrative in an Era of Loss*, edited by Jonathan Elmore, 67–86. Lanham, MD: Lexington Books, 2020.

- Barragan, Salvador. "Infonomics and the Environment." *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 303–13. <https://doi.org/10.1108/RMJ-11-2020-0038>.
- Barrowcliffe, Rose. "Searching for Ourselves: Analysing Metadata to Incorporate Indigenous Perspectives in Existing Archive Collections." Presented at the ICA 2021 Virtual Conference: Empowering Knowledge Societies, October 25, 2021. <https://www.youtube.com/watch?v=oTYyk-YpC-E>.
- Bartolomei, Coral Salomón, and Tania Ríos Marrero. "Data, Displacement, and Disaster Response." Philadelphia, PA, 2018. <https://penntnl.wordpress.com/2018/10/04/data-displacement-and-disaster-response-two-philadelphia-libraries-take-action-in-the-aftermath-of-hurricane-maria/>.
- Bates, Jo. "'This Is What Modern Deregulation Looks like' : Co-Optation and Contestation in the Shaping of the UK's Open Government Data Initiative." *The Journal of Community Informatics* 8, no. 2: Special Issue: Community Informatics and Open Government Data (2012). <https://doi.org/10.15353/joci.v8i2.3038>.
- Bates, Jo, Paula Goodale, Yuwei Lin, and Penny Andrews. "Assembling an Infrastructure for Historic Climate Data Recovery: Data Friction in Practice." *Journal of Documentation* 75, no. 4 (2018): 791–806. <https://doi.org/10.1108/JD-08-2018-0130>.
- Bateson, Gregory, Don D. Jackson, Jay Haley, and John H. Weakland. "Toward a Theory of Schizophrenia." In *Steps to an Ecology of Mind*, by Gregory Bateson, 201–27, University of Chicago Press edition. Chicago: University of Chicago Press, 2000.
- Battley, Belinda. "Authenticity in Places of Belonging: Community Collective Memory as a Complex, Adaptive Recordkeeping System." *Archives and Manuscripts* 48, no. 1 (2020): 59–79. <https://doi.org/10.1080/01576895.2019.1628649>.
- Beam, Carey, and Carrie Schwier. "Learning in Place: The Teaching Archivist and Place-Based Education." *Archival Issues* 39, no. 1 (2018): 7–25. <https://doi.org/10.31274/archivalissues.11046>.
- Becker, Howard S. "The Epistemology of Qualitative Research." In *Ethnography and Human Development: Context and Meaning in Social Inquiry*, edited by Richard Jessor, Anne Colby, and Richard A. Shweder, 53–71. Chicago, IL: University of Chicago Press, 1996.
- Beckley-Jackson, Laurel. "'Don't Drink the Water': The Camp Lejeune Water Contamination Incident." *DtP: Documents to the People* 44, no. 4 (Winter 2016): 4–9. <https://doi.org/10.5860/dtP.v44i4.6223>.
- Belaisch, France Saïe. "Green Archives Buildings: Archive Buildings and Sustainable Development." *Comma* 2 (2008): 133–38. <https://doi.org/10.3828/comma.2008.2.15>.
- . "Sustainable Development and Archives Buildings in France." *International Preservation News*, December 2011.
- Bell, Joshua A. "Dystopian Realities and Archival Dreams in the Purari Delta of Papua New Guinea." *Social Anthropology/Anthropologie Sociale* 24, no. 1 Special Issue: Utopian Archives, Decolonial Affordances (February 2016): 20–35. <https://doi.org/10.1111/1469-8676.12285>.
- Bell, Nancy. "Leaders of Change: Strategies for Meeting the Environmental Challenge." Hyattsville, MD, 2011. <https://www.archives.gov/preservation/conferences/2011/presentations/bell.pdf>.

- Bellows, Anne. "Holding Local Governments Accountable for Environmental Discrimination: The Promise of California Government Code § 65008." *Ecology Law Quarterly* 41, no. 1 (2014): 1–35.
- Belton, Tom. "From Meteorological Registers to Climate Data: Information Gathering in the Early Years of the Meteorological Service of Canada." *Archivaria* 84 (Fall 2017): 127–49.
- Beredo, Cheryl. *Import of the Archive: U.S. Colonial Rule of the Philippines and the Making of American Archival History*. Sacramento, CA: Litwin Books, 2013.
- Berger, Monica, and John Carey. "Open Scholarship and Climate Change: The Imperative for a New Information Ecosystem for the Anthropocene." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-i004>.
- Berman, Bruce, and Mary M. Cronin. "Project DOCUMERICA: A Cautionary Tale." *Journalism History* 43, no. 4 (Winter 2018): 186–97. <https://doi.org/10.1080/00947679.2018.12059180>.
- Berry, Dorothy. "Developing Imagination." *Collective Responsibility: National Forum on Labor Practices for Grant-Funded Digital Positions* (blog), June 24, 2019. <http://laborforum.diglib.org/2019/06/24/developing-imagination/>.
- Besser, Howard, Eira Tansey, Jill Kubit, and John Burgess. "Plenary and Discussion." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-i005>.
- Bettavia, Rhiannon. "Educating Digital Stewards." *Digital Preservation Coalition* (blog), November 29, 2017. <https://www.dpconline.org/blog/wdpd/educating-digital-stewards-blog>.
- Bhattacharjee, Sudip. "Curation of Manuscripts in the Tropical Savanna Climate of North-Eastern India." *IFLA Journal* 48, no. 2 (June 2022): 282–88. <https://doi.org/10.1177/03400352211030942>.
- Bhebhe, Sindiso, Mehlu Masuku, and Patrick Ngulube. "Infrastructural Challenges on Archives and Recordkeeping at the National Archives of Zimbabwe." *Journal of the South African Society of Archivists* 46 (2013): 47–62.
- Bickford, Jacob. "Save Our Spiders: Crawler Traps and Sustainability at the UK Government Web Archive." *Digital Preservation Coalition* (blog), October 31, 2023. <https://www.dpconline.org/blog/wdpd/wdpd2023-bickford>.
- Bishop, Bradley Wade, and Carolyn Hank. "Data Curation Profiling of Biocollections." *Proceedings of the Association for Information Science and Technology* 53, no. 1 (2016): 1–9. <https://doi.org/10.1002/pra2.2016.14505301046>.
- Bladow, Kyle. "'The Future That Haunts Us Now': Oblique Cli-Fi and Indigenous Futurity." *Transmotion* 7, no. 2: Indigeneity and the Anthropocene (December 20, 2021): 130–50. <https://doi.org/10.22024/UniKent/03/tm.986>.
- bloggERS! "Preservation Beyond the Bits: An Interview with Linda Tadic," April 28, 2016. <https://saers.wordpress.com/2016/04/28/preservation-beyond-the-bits-an-interview-with-linda-tadic/>.
- bloggERS! "Spotlight: Interview with Tessa Walsh, Artefactual," May 26, 2020. <https://saers.wordpress.com/2020/05/26/spotlight-interview-with-tessa-walsh-artefactual/>.
- Blood, George. "Fixating on Fixity: Is Your Choice of Checksum in Conflict with Your Climate Goals?" Virtual Conference, 2022.
- Blue Ribbon Task Force on Sustainable Digital Preservation and Access. "Sustainable Economics for a Digital Planet: Ensuring Long-Term Access to Digital Information." La Jolla, CA: Blue Ribbon Task Force on Sustainable Digital Preservation and Access, 2010. [https://web.archive.org/web/20100609192705/http://brtf.sdsc.edu/biblio/BRTF\\_Final\\_Report.pdf](https://web.archive.org/web/20100609192705/http://brtf.sdsc.edu/biblio/BRTF_Final_Report.pdf).

- Blumenthal, Karl, Peggy Griesinger, Julia Y. Kim, Shira Peltzman, and Vicky Steeves. "What's Wrong with Digital Stewardship: Evaluating the Organization of Digital Preservation Programs from Practitioners' Perspectives." *Journal of Contemporary Archival Studies* 7 (2020): Article 13.
- Boel, Jens, and David C. Sutton. "Archives at Risk: Addressing a Global Concern." *Comma* 2017, no. 1 (November 2017): 111–19. <https://doi.org/10.3828/comma.2017.9>.
- Bolin, Robert, and Lois Stanford. "Constructing Vulnerability in the First World: The Northridge Earthquake in Southern California, 1994." In *The Angry Earth: Disaster in Anthropological Perspective*, edited by Anthony Oliver-Smith and Susanna M. Hoffman, 89–112. New York: Routledge, 1999.
- Bonandrini, Bruno. "The National Archives Conservation Building at Pierrefitte-Sur-Seine and Its Air Treatment System." *International Preservation News*, December 2011.
- Bond, Lucy, Ben De Bruyn, and Jessica Rapson. "Planetary Memory in Contemporary American Fiction." *Textual Practice* 31, no. 5 (2017): 853–66. <https://doi.org/10.1080/0950236X.2017.1323458>.
- bonhomme, edna. "Collective Herbal Healing: A Counter-Archive in the Making." *COVEN Berlin* (blog), November 12, 2019. <https://www.covenberlin.com/collective-herbal-healing-a-counter-archive-in-the-making/>.
- Bookspan, Shelley. "Corporate Records and Environmental Liability in the Era of Superfund." In *Corporate Archives and History: Making the Past Work*, edited by Arnita A. Jones and Philip L. Cantelon, 109–13. Malabar, FL: Krieger Publishing Company, 1993.
- Bowler, Catherine, and Peter Brimblecombe. "Archives and Air Pollution History." *Journal of the Society of Archivists* 13, no. 2 (1992): 136–42. <https://doi.org/10.1080/00379819209511679>.
- Bowman, Spencer. "The Radioactive Dirt: An Analysis of the Role Information Has Played Throughout Hanford's History." *DttP: Documents to the People* 47, no. 4 (Winter 2019): 17–21. <https://doi.org/10.5860/dttp.v47i4.7214>.
- Bracke, Marianne, and Michael Fosmire. "Teaching Data Information Literacy Skills in a Library Workshop Setting: A Case Study in Agricultural and Biological Engineering." In *Data Information Literacy: Librarians, Data, and the Education of a New Generation of Researchers*, edited by Jake Carlson and Lisa R. Johnston, 129–48. West Lafayette, IN: Purdue University Press, 2015.
- Bradley, Kevin. "Defining Digital Sustainability." *Library Trends* 56, no. 1 (Summer 2007): 148–63. <https://doi.org/10.1353/lib.2007.0044>.
- Bredbenner, Stephanie, Alison Fulmer, Meghan Rinn, Rose Oliveira, and Kimberly Barzola. "'Nothing About It Was Better Than a Permanent Job': Report of the New England Archivists Contingent Employment Study Task Force." New England Archivists, February 2022. [https://www.newenglandarchivists.org/resources/Documents/Inclusion\\_Diversity/Contingent-Employment-2022-report.pdf](https://www.newenglandarchivists.org/resources/Documents/Inclusion_Diversity/Contingent-Employment-2022-report.pdf).
- Brimlyer, Gracen Mikus. "Proximity Matters: Disability, Erasure & the Archival Bond of Natural History." UCLA, 2020. <https://escholarship.org/uc/item/98c6t32x>.
- Brimblecombe, Peter. "Refining Climate Change Threats to Heritage." *Journal of the Institute of Conservation* 37, no. 2 (2014): 85–93. <https://doi.org/10.1080/19455224.2014.916226>.
- Brinati, Teresa. "In the Aftermath of Hurricane Katrina." *Archival Outlook*, October 2005.

- Brown, Amanda H., Barbara Losoff, and Deborah R. Hollis. "Science Instruction Through the Visual Arts in Special Collections." *Portal: Libraries and the Academy* 14, no. 2 (2014): 197–216.
- Brown, Jenny. "Workers in the Northeast Come Face to Face with Climate Change." *Labor Notes*, October 31, 2012. <https://labornotes.org/2012/10/workers-northeast-come-face-face-climate-change>.
- Brown, Kate. "Marie Curie's Fingerprint: Nuclear Spelunking in the Chernobyl Zone." In *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, edited by Anna Lowenhaupt Tsing, Heather Anne Swanson, Elaine Gan, and Nils Bubandt, 651–63. Minneapolis, MN: University of Minnesota Press, 2017.
- Brown, Tommy C. "The Right to Know . . . Or Not: The Freedom of Information Act, 1955–1974." *Provenance, Journal of the Society of Georgia Archivists* 33, no. 2 (2016): 93–127.
- Brunvand, Amy. "Re-Localizing the Library Environmental Humanities Models." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-s05-i001>.
- Brydon, Diana. "Risk, Mortality, and Memory: The Global Imaginaries of Cherie Dimaline's *The Marrow Thieves*, M.G. Vassangi's *Nostalgia*, and André Alexis's *Fifteen Dogs*." *Revista Canaria de Estudios Ingleses* 78 (April 2019): 97–112. <https://doi.org/10.25145/j.recaesin.2019.78.07>.
- Bubandt, Nils. "Haunted Geologies: Spirits, Stones, and the Necropolitics of the Anthropocene." In *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, edited by Anna Lowenhaupt Tsing, Heather Anne Swanson, Elaine Gan, and Nils Bubandt, 6121–41. Minneapolis, MN: University of Minnesota Press, 2017.
- Buchanan, Alexandrina, and Michelle Bastian. "Activating the Archive: Rethinking the Role of Traditional Archives for Local Activist Projects." *Archival Science* 15 (2015): 429–51. <https://doi.org/10.1007/s10502-015-9247-3>.
- Bundsgaard, Inge, and Anders Sode-Pederson. "Danish Strategies for New Methods of Digital Archival Description and Access." *Comma* 2004, no. 1 (2004): 67–76. <https://doi.org/10.3828/comma.2004.1.10>.
- Bunn, Jenny. "Grounded Theory." In *Research in the Archival Multiverse*, edited by Anne J. Gilliland, Sue McKemmish, and Andrew J. Lau, 516–36. Clayton, Victoria: Monash University Publishing, 2017.
- Burant, Jim. "The Acquisition of Visual Records Relating to Native Life in North America." *Provenance, Journal of the Society of Georgia Archivists* 10, no. 1 (1992): 1–25.
- Burgess, John. "Adaptability and Resilience: A Core LIS Value." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-i003>.
- Burke, Bridget. "Capturing Conversations about Climate Change in Alaska." In *Cool Libraries in a Melting World*, edited by Marcel Brannemann and Daria O. Carle, 140–48. Bremerhaven, Germany: Helmholtz Gemeinschaft, 2010. <https://doi.org/10.7939/R36M33K4V>.
- Burr, Gordon, Lori Podolsky, and Yves A. Lapointe. "Redrawing Historical Weather Data and Participatory Archives for the Future." *Comma* 2021, no. 2 (2023): 297–315. <https://doi.org/10.3828/coma.2021.28>.
- Bussel, Geert-Jan van, Nikki Smit, and John van de Pas. "Digital Archiving, Green IT and Environment: Deleting Data to Manage Critical Effects of the Data Deluge." *Electronic Journal of Information Systems Evaluation* 18, no. 2 (2015): 187–98.

- Bustard, Bruce, and Lee Ann Potter. "Searching for the Seventies: Photographs from the Environmental Protection Agency's DOCUMERICA Project." *Social Education* 77, no. 2 (April 2013): 52–56.
- Callaghan, Sarah, Steve Donegan, and Sam Pepler. "Making Data a First Class Scientific Output: Data Citation and Publication by NERC's Environmental Data Centres." *International Journal of Digital Curation* 7, no. 1 (2012): 107–13. <https://doi.org/10.2218/ijdc.v7i1.218>.
- Callahan, Brian Robert. "Complexities of Collaboration: An Open Source Story." PhD, Rensselaer Polytechnic Institute, 2018. <https://hdl.handle.net/20.500.13015/2285>.
- Callison, Candis. *How Climate Change Comes to Matter: The Communal Life of Facts*. Durham, NC: Duke University Press, 2014.
- Campbell, G. Garrett, Dave Gallaher, Carl Gallaher, and Alex Calder. "Nimbus Satellite Data Recovery from Visible Film Archive: 1964, 1966, 1969." In *Cold Regions: Pivot Points, Focal Points*, edited by Shelly Sommer and Ann Windnagel, 157–61. Boulder, CO, 2012. <https://nsidc.org/sites/default/files/documents/other/plc-24-proceedings-gd-34.pdf>.
- Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council. "Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans," December 2018. <https://ethics.gc.ca/eng/documents/tcps2-2018-en-interactive-final.pdf>.
- Cannella, Megan E. "Dreams in a Time of Dystopic Colonialism: Cherie Dimaline's *The Marrow Thieves* and Louise Erdrich's *Future Home of the Living God*." In *Displaced: Literature of Indigeneity, Migration, and Trauma*, edited by Kate Rose, 111–20. Routledge Studies in Contemporary Literature 45. New York: Routledge, 2020.
- Carbajal, Itza. "Earth Day 2021." *Project\_arcc* (blog), April 19, 2021. <https://projectarcc.org/2021/04/19/earth-day-2021/>.
- . "S2 E6: The Home of Memory." Interview by Nicole Kang Ferraiolo. Podcast, 25:18, March 9, 2021. Material Memory. <https://material-memory.clir.org/2021/03/09/s2-e6-the-home-of-memory/>.
- . "The Conversation Must Go On: Climate Change and Archival Practice." *bloggERS!* (blog), December 15, 2020. <https://saaers.wordpress.com/2020/12/15/the-conversation-must-go-on-climate-change-and-archival-practice/>.
- . "Youth Records During Disasters: The New Orleans Hurricane Katrina Case Study." Prato, Italy, 2022.
- Carbajal, Itza, and Ted Lee. "If Not Now, When? Archivists Respond to Climate Change." *Archival Outlook*, December 2019.
- Carlson, Jake, and Marianne Stowell-Bracke. "Data Management and Sharing from the Perspective of Graduate Students: An Examination of the Culture and Practice at the Water Quality Field Station." *Portal: Libraries and the Academy* 13, no. 4 (October 2013): 343–61.
- Carmicheal, David. "The Georgia Archives Budget: An Unfolding Crisis." *Provenance, Journal of the Society of Georgia Archivists* 31, no. 1: Special Issue on Advocacy (January 2013): 7–13.
- Cassar, May. "Energy Reduction and the Conservation of Cultural Heritage: A Review of Past, Present and Forthcoming Initiatives." *International Preservation News*, December 2011.
- Castron, Melissa. "Colonialism, Computerized: The Canada Land Inventory and the Canada Geographic Information System at Library and Archives Canada." *Archivaria* 93 (Spring 2022): 136–61.

- Caswell, Michelle. *Urgent Archives: Enacting Liberatory Memory Work*. London: Routledge, 2021.
- Caswell, Michelle, and Marika Cifor. "From Human Rights to Feminist Ethics: Radical Empathy in the Archives." *Archivaria* 81 (Spring 2016): 23–43.
- Caswell, Michelle, Ricardo Punzalan, and T.-Kay Sangwand. "Critical Archival Studies: An Introduction." *Journal of Critical Library and Information Studies* 1, no. 2 (June 27, 2017). <https://doi.org/10.24242/jclis.v1i2.50>.
- Catchpole, A. J. W., and D. W. Moodie. "Archives and the Environmental Scientist." *Archivaria* 6 (Summer 1978): 113–36.
- Cedar Face, Mary Jane. "Southern Oregon Digital Archives: Preserving a Unique Bioregion and Its Ethnohistory." *College & Research Libraries News*, April 2004, 193.
- Cedar Face, Mary Jane, and Deborah Hollens. "A Digital Library to Serve a Region: The Bioregion and First Nations Collections of the Southern Oregon Digital Archives." *Reference & User Services Quarterly* 44, no. 2 (December 2004): 116–21.
- Centeno, Miriam. Episode 25: Disaster Response. Interview by Terra Dankowski. Podcast, 28:33, May 8, 2018. Dewey Decibel. <https://soundcloud.com/dewey-decibel-703453552/episode-25-disaster-response>.
- . "Every Drop Counts: The Recovery of Libraries and Archives in Puerto Rico after Hurricane Maria." Presented at the Libraries, Literatures, and Literacies Minitalks, The University of Illinois iSchool and the Mortenson Center for International Library Programs, February 22, 2018. <https://conifer.rhizome.org/HurricaneMariaPR/libraries-archives-and-museums-in-the-aftermath-of-hurricane-maria/20180808102250/https://us.bbcollab.com/collab/ui/session/playback>.
- . "Following the Practice of Mushiboshi or 'Drying Bugs': Why Airing out Your Dirty Laundry Can Lead to Good Preservation Practices." Champaign, IL, 2014. <https://hdl.handle.net/2142/55795>.
- . "Review of Flood in Florence, 1966: A Fifty-Year Retrospective." *The American Archivist* 83, no. 1 (Spring/Summer 2020): 199–203. <https://doi.org/10.17723/0360-9081-83.1.199>.
- Chachage, Bukaza, Patrick Ngulube, and Christine Stillwell. "Developing a Model Corporate Records Management System for Sustainability Reporting: A Case of the Iringa Region in Tanzania." *South African Journal of Information Management* 8, no. 1 (March 2006). <https://doi.org/10.1108/01435120510631747>.
- Charmaz, Kathy. *Constructing Grounded Theory*. 2nd ed. Los Angeles: SAGE, 2014.
- Charney, Madeleine, and Petra Hauke. "Global Action on the Urgency of Climate Change: Academic and Research Libraries' Contributions." *College & Research Libraries* 81, no. 3 (March 2020): 114–17. <https://doi.org/10.5860/crln.81.3.114>.
- Chen, Janice. "A Greener Film Archive." *Digital Preservation Coalition* (blog), November 22, 2021. <https://www.dpconline.org/blog/wdpd/a-greener-film-archive>.
- Chen, Robert. "Enabling Interdisciplinary Use of Scientific Data on Human Interactions in the Environment." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-i004>.
- Chepchirchir, Sally, Tom Kwanya, and Alice Kamau. "Maximising the Socioeconomic Value of Indigenous Knowledge through Policies and Legislation in Kenya." *Global Knowledge, Memory and Communication* 68, no. 1/2 (2019): 60–75. <https://doi.org/10.1108/GKMC-05-2018-0043>.

- Choksey, Lara. *Narrative in the Age of the Genome: Genetic Worlds*. Explorations in Science and Literature. London: Bloomsbury Academic, 2021.
- Chowdhury, Saiful Alam. "S2 E5: Living Heritage." Interview by Nicole Kang Ferraiolo. Podcast, 23:02, February 11, 2021. Material Memory. <https://material-memory.clir.org/2021/02/11/s2-e5-living-heritage/>.
- Chowkwanyun, Merlin, and Chris Sellers. "What Went on in the Trump EPA? Announcing a New FOIA Archive." *Environmental Data & Governance Initiative* (blog), July 5, 2022. <https://envirodatagov.org/what-went-on-in-the-trump-epa-announcing-a-new-foia-archive/>.
- Choy, Timothy K. "Articulated Knowledges: Environmental Forms after Universality's Demise." *American Anthropologist* 107, no. 1 (March 2005): 5–18. <https://doi.org/10.1525/aa.2005.107.1.005>.
- Christenson, Heather. "The Large-Scale Digital Library and Response to the Anthropocene." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-i007>.
- Cirac-Claveras, Gemma. "The Weather Privateers: Meteorology and Commercial Satellite Data." *Information & Culture* 53, no. 3/4 (2018): 271–302. <https://doi.org/10.7560/IC53302>.
- Civallero, Edgardo. "Conservation Science, Local Community, and a Library in Galapagos." Athens, Greece: International Federation of Library Associations and Institutions, 2019. <https://library.ifla.org/id/eprint/2503>.
- . "Galapagos inside an Archive — for the Community." Athens, Greece: International Federation of Library Associations and Institutions, 2019. <https://library.ifla.org/id/eprint/2571>.
- Clary, David A. "The Archivist and the Human Environment." *The Midwestern Archivist* 6, no. 1 (1981): 35–45.
- Clough, Patricia Ticineto. "Introduction." In *The Affective Turn: Theorizing the Social*, edited by Patricia Ticineto Clough and Jean Halley, 1–33. Durham, NC: Duke University Press, 2007.
- Clukey, Amy. "There Is No South: The Weird Plantationocene of H. P. Lovecraft and Jeff VanderMeer." In *A History of the Literature of the U.S. South*, edited by Harilaos Stecopoulos, 376–93. Cambridge: Cambridge University Press, 2021.
- Cobourn, Alston Brake, Jen Corrinne Brown, Edward Warga, and Lisa Louis. "Toward Metaliteracy and Transliteracy in the History Classroom: A Case Study Among Underserved Students." *The American Archivist* 85, no. 2 (Fall/Winter 2022): 587–608. <https://doi.org/10.17723/2327-9702-85.2.587>.
- Cohen, Daniel Aldana. "It Gets Wetter." *Dissent* 64, no. 3 (Summer 2017): 7–11. <https://doi.org/10.1353/dss.2017.0064>.
- Cole, Matthew Benjamin. "'At the Heart of Human Politics': Agency and Responsibility in the Contemporary Climate Novel." *Environmental Politics* 31, no. 1 (2022): 132–51. <https://doi.org/10.1080/09644016.2021.1902699>.
- "Collective Responsibility Labor Advocacy Toolkit." Accessed December 28, 2023. <https://toolkit.dobetterlabor.com/>.
- Collier, Clyde. "The Archivist and Weather Records." *The American Archivist* 26, no. 4 (October 1963): 477–85. <https://doi.org/10.17723/aarc.26.4.g63322kv71090325>.
- Collier, Jr., Richard, and Mary Samouelian. "Playing in the Sandbox: EAC-CPF Projects at Duke University." *Journal of Archival Organization* 12, no. 1–2 (2015): 4–20. <https://doi.org/10.1080/15332748.2014.997338>.

- Condrey, Richard, Faye Phillips, and Tony Presti. "Buffalo on the Beaches: Electronic Imaging of Historical Sources." *Provenance, Journal of the Society of Georgia Archivists* 10, no. 1 (1992): 65–71.
- Conrad, Ernest A. "Climate Control Systems Design and Climate Change." Tenerife, Spain, 2007. [https://www.getty.edu/conservation/our\\_projects/science/climate/paper\\_conrad.pdf](https://www.getty.edu/conservation/our_projects/science/climate/paper_conrad.pdf).
- Considering Consumption*, 2022. <https://www.youtube.com/watch?v=UTW2SMvSjkk>.
- Cook, Michael. "Appraisal and Access: We Should Expect Changes Driven by the Media and by Public Awareness." *Records Management Journal* 20, no. 1 (2010): 72–77.
- Corbiere, Alan Ojiig. "The Audio of Text: Art of Tradition." In *Afterlives of Indigenous Archives: Essays in Honor of the Occom Circle*, edited by Ivy Schweitzer and Gordon Henry, 202–11. Hanover, NH: Dartmouth College Press, 2019. <https://digitalcommons.dartmouth.edu/facoa/3983>.
- Cox, Jennifer. "Opening Address, Seminar on the Protection of Documents and Vital Data in the Event of Emergencies." In *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, edited by Hyacinth Brown, 4–6. Kingston, Jamaica: Jamaica Library Association, 1989.
- Cox, Robert S. "Maximal Processing, or, Archivist on a Pale Horse." *Journal of Archival Organization* 8, no. 2 (2010): 134–48. <https://doi.org/10.1080/15332748.2010.526086>.
- Cox, Sandra. "Decolonial Speculative Fiction: Indigenous Resistance in *The Marrow Thieves*, *Trail of Lightning* and *Storm of Locusts*." *Journal of Science Fiction* 5, no. 1 (May 2021): 65–79.
- Craig, Roger, Tamara Selzer, and Josette Seymour. "There Is Disaster Planning and There Is Reality—the Cayman Islands National Archive (CINA) Experience with Hurricane Ivan." *Journal of the Society of Archivists* 27, no. 2 (2006): 187–99. <https://doi.org/10.1080/00379810601081396>.
- Cramer, Benjamin W. "Nearly Extinct in the Wild: The Vulnerable Transparency of the Endangered Species List." *The Journal of Civic Information* 3, no. 2 (August 2021). <https://doi.org/10.32473/joci.v3i2.128355>.
- Crane, Lisa. "Navigating the #CLIRWater Project." In *Wading Through the Past: Infrastructure, Indigeneity & the Western Water Archives*, edited by Char Miller. Claremont, CA: The Claremont Colleges Library, 2021. <https://pressbooks.claremont.edu/westernwatersymposium/chapter/chapter-1/>.
- Craps, Stef. "Climate Change and the Art of Anticipatory Memory." *Parallax* 23, no. 4 (2017): 479–92. <https://doi.org/10.1080/13534645.2017.1374518>.
- Cross, Samantha. "Archivists on the Issues: The Neutrality Lie and Archiving in the Now." *Issues & Advocacy* (blog), March 27, 2017. <https://issuesandadvocacy.wordpress.com/2017/03/27/archivists-on-the-issues-the-neutrality-lie-and-archiving-in-the-now/>.
- Crownshaw, Richard. "Climate Change Fiction and the Future of Memory: Speculating on Nathaniel Rich's *Odds against Tomorrow*." *Resilience* 4, no. 2 (2017): 127–46.
- Currie, Morgan L., Britt S. Paris, and Joan M. Donovan. "What Difference Do Data Make? Data Management and Social Change." *Online Information Review* 43, no. 6 (October 2019): 971–85. <https://doi.org/10.1108/OIR-02-2018-0052>.
- Daniel, Vinod. "Building Management and Maintenance in the New Millennium." *Library Review* 50, no. 7/8 (2001): 407–16.

- Dassié, Emilie, Kristine DeLong, Branwen Williams, Nerilie Abram, Logan Brenner, Chloé Brahmi, Kim M. Cobb, et al. "Saving Our Marine Archives." *Eos* 98 (February 24, 2017). <https://doi.org/10.1029/2017EO068159>.
- Daston, Lorraine. "The Time of the Archive." In *Science in the Archives : Pasts, Presents, Futures*, 329–32. Chicago, IL: University of Chicago Press, 2017.
- Davis, Casey. "Dear Tomorrow, A Conversation with the Future About Climate Change." *Project\_arcc* (blog), March 14, 2016. <https://projectarcc.org/2016/03/14/deartomorrow-a-conversation-with-the-future-about-climate-change/>.
- . "Nothing to Fear but Inaction and Division." *Project\_arcc* (blog), August 14, 2015. <https://projectarcc.org/2015/08/14/nothing-to-fear-but-inaction-and-division/>.
- Davis, Casey E. "Acting on Climate Change within the Archival Profession." *Issues & Advocacy* (blog), January 12, 2016. <https://issuesandadvocacy.wordpress.com/2016/01/12/acting-on-climate-change-within-the-archival-profession/>.
- . "Our Story." *Project\_arcc* (blog), June 6, 2015. <https://projectarcc.org/2015/06/06/our-story/>.
- Dayan, Tamar, and Bella Galil. "Natural History Collections as Dynamic Research Archives." In *Stepping in the Same River Twice: Replication in Biological Research*, edited by Ayelet Shavit and Aaron M. Ellison, 55–63. New Haven, CT: Yale University Press, 2017.
- De Kosnik, Abigail. "Piracy Is the Future of Culture: Speculating about Media Preservation after Collapse." *Third Text* 34, no. 1 (2020): 62–70. <https://doi.org/10.1080/09528822.2019.1663687>.
- Dean, Courtney, Carady DeSimone, Steve Duckworth, Marissa Friedman, Warren Lambert, Miriam Meislik, Lydia Tang, and Amy Wickner. "Archival Workers Collective 2022 Survey Summary." *Archival Workers Emergency Fund* (blog), April 17, 2023. <https://awefund.wordpress.com/2023/04/17/archival-workers-collective-2022-survey-summary/>.
- Dean, Courtney, Carady DeSimone, Bridget Malley, and Lydia Tang. "AWE Fund Winter 2020 Survey Summary." *Archival Workers Emergency Fund* (blog), July 28, 2021. <https://awefund.wordpress.com/2021/07/28/awe-fund-winter-2020-survey-summary/>.
- Dean, Holly M., and Jennifer Mezick. "An Examination of Seed Libraries across Two Academic Institutions." *Urban Library Journal* 26, no. 1 (July 2020): Article 3.
- Dearstyne, Bruce W. "Taking Charge: Disaster Fallout Reinforces RIM's Importance." *Information Management Journal* 40, no. 4 (August 2006): 37–43.
- Delaney, Jill. "An Inconvenient Truth? Scientific Photography and Archival Ambivalence." *Archivaria* 65 (Spring 2008): 75–95.
- Deloria, Jr., Vine. *Custer Died For Your Sins: An Indian Manifesto*. New York: Avon, 1969.
- DeLucia, Christine. "Caretaking Around Collecting and the Digital Turn: Lessons in Ongoing Opportunities and Challenges from the Native Northeast." In *Afterlives of Indigenous Archives: Essays in Honor of the Occom Circle*, edited by Ivy Schweitzer and Gordon Henry, 79–92. Hanover, NH: Dartmouth College Press, 2019. <https://digitalcommons.dartmouth.edu/facoa/3983>.
- Demb, Sarah R., and Eira Tansey. "Special Issue Editorial." *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 217–21. <https://doi.org/10.1108/RMJ-04-2021-0017>.
- Demb, Sarah, and Bruce Schneier. "When the Lights Go Out: Digital Information and Existential Risk." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-i007>.

- Denton, William. "Anthropocene Librarianship Comes in Many Forms. One Is the Making of Art." In *Miskatonic University Press*. Toronto, ON, 2016.  
<https://www.miskatonic.org/2016/11/17/manyforms/>.
- Department for Professional Employees, AFL-CIO. "Library Professionals: Facts & Figures," April 16, 2023. <https://www.dpeaflcio.org/factsheets/library-professionals-facts-and-figures>.
- Deri, Andrea, Nicola Bingham, Eilidh MacGlone, and Trevor Thomson. "UK Web Archive Climate Change Collection." *UK Web Archive Blog* (blog), October 4, 2021.  
<https://blogs.bl.uk/webarchive/2021/10/uk-web-archive-climate-change-collection.html>.
- "Developing Cooperative Disaster Networks for Cultural Institutions: A White Paper on the Pennsylvania Cultural Resilience Network (PaCRN)." Philadelphia, PA: Conservation Center for Art & Historic Artifacts (CCAHA), January 2017. <https://ccaaha.org/resources/developing-cooperative-disaster-networks-cultural-institutions-white-paper-pennsylvania>.
- Dickerson, Bryan J. "Recovering from Hurricane Sandy: A Municipal Government Archives Role in Disaster Recovery." *Provenance, Journal of the Society of Georgia Archivists* 35, no. 1 (2018): 91–105.
- Digital Library Federation Working Group on Labor in Digital Libraries. "Research Agenda: Valuing Labor in Digital Libraries." DLF Wiki, 2018. <https://wiki.diglib.org/Labor/Valuing-Labor/Research-Agenda>.
- Dimaline, Cherie. *The Marrow Thieves*. Toronto, ON: DCB, 2017.
- Dirksen, Rebecca. "Haiti's Hidden Archives and Accidental Archivists: A View on the Private Collections and Their Keepers at the Heart of Safeguarding the Nation's Classical Music Heritage." *Latin American Music Review* 40, no. 1 (Spring/Summer 2019): 59–88.  
<https://doi.org/10.7560/LAMR40103>.
- Dominy, Graham. "Archives Serving Science: Historic Maritime Records as Sources for Indian Ocean Climate Change Research: Potential and Problems." *Mousaion: South African Journal of Information Studies* 39, no. 2 (2021): #9153. <https://doi.org/10.25159/2663-659X/9153>.
- Dong, Lorraine. "The Economics and Politics of International Preservation Collaborations: A Malian Case Study." *Archival Science* 12 (September 2012): 267–85.  
<https://doi.org/10.1007/s10502-011-9156-z>.
- Doyle, Maya, and Allison Werner-Lin. "That Eagle Covering Me: Transitioning and Connected Autonomy for Emerging Adults with Cystinosis." *Pediatric Nephrology* 30, no. 2 (February 2015): 281–91. <https://doi.org/10.1007/s00467-014-2921-5>.
- Drake, Jarrett. "Blood at the Root." *Journal of Contemporary Archival Studies* 8, no. 1 (2021): Article 6.
- Drake, Jarrett M. "Diversity's Discontents: In Search of an Archive of the Oppressed." *Archives and Manuscripts* 17, no. 2 (2019): 270–79. <https://doi.org/10.1080/01576895.2019.1570470>.
- . "Insurgent Citizens: The Manufacture of Police Records in Post-Katrina New Orleans and Its Implications for Human Rights." *Archival Science* 14, no. 3–4 (October 2014): 365–80. <https://doi.org/10.1007/s10502-014-9224-2>.
- Dray, Malachi. "Letter Carrier: Air Quality Is a Union Issue." *Labor Notes*, August 24, 2021.  
<https://labornotes.org/blogs/2021/08/letter-carrier-air-quality-union-issue>.
- Dryden, Jean. "Climate Change, Copyright, and Archives." *Comma* 2021, no. 2 (2023): 387–97.  
<https://doi.org/10.3828/coma.2021.34>.
- Duerr, Ruth, and Allaina Howard. "Discovery and Access of Historic Literature of the IPY's (DAHLI): Rescuing Records and Publications of Early IPY Ventures." In *Building Polar*

- Networks: A Strategy for the Future*, edited by Silvia Sarti and Michela Cecconi, 103–9. Rome, Italy, 2006. <https://doi.org/10.7939/R3Z31P46X>.
- Dumont, Jean-Noël, Simon Wisbey, Stephan Hotzel, Arne Berckmans, and Anne Claudel. “Analysis of the Needs for Long Term Memory and Knowledge Preservation Relating to Radioactive Waste Disposal Facilities.” Phoenix, AZ, 2017. [https://archivedproceedings.econference.io/wmsym/2017/pdfs/FinalPaper\\_17213\\_0327022036.pdf](https://archivedproceedings.econference.io/wmsym/2017/pdfs/FinalPaper_17213_0327022036.pdf).
- Dupigny-Giroux, Lesley-Ann, Thomas F. Ross, Joe D. Elms, Raymond Truesdell, and Stephen R. Doty. “NOAA’s Climate Database Modernization Program: Rescuing, Archiving, and Digitizing History.” *Bulletin of the American Meteorological Society* 88, no. 7 (2007): 1015–17.
- Duplisea, Genna. “Scope & Content: Recognizing the Many Climate Change Narratives.” *Project\_arcc* (blog), August 3, 2015. <https://projectarcc.org/2015/08/03/scope-content-recognizing-the-many-climate-change-narratives/>.
- Durbin, Trevor J. “Big Ocean: Marine Conservation, Bureaucratic Practice, and the Politics of Vagueness in the Pacific Islands.” PhD, Rice University, 2014. <https://hdl.handle.net/1911/87796>.
- Durham, Curtis J. “The Necessity of Environmentally Sustainable Digital Preservation and Its Effects on Preservation Workflow,” December 2019. JScholarship. <http://jhir.library.jhu.edu/handle/1774.2/62122>.
- Eagle, Jennifer Hale. “‘I Want Them to Know We Suffer Here’: Preserving Records of Migrant Detention in Opposition to Racialized Immigration Enforcement Structures.” *Journal of Radical Librarianship* 5 (2019). <https://journal.radicalibrarianship.org/index.php/journal/article/view/32>.
- Economides, Louise, and Laura Shackelford. “Introduction: Weird Ecology: VanderMeer’s Anthropocene Fiction.” In *Surreal Entanglements: Essays on Jeff VanderMeer’s Fiction*, edited by Louise Economides and Laura Shackelford, 1–26. New York: Routledge, 2021.
- Eda, Haruki. “Queer Korean Diaspora: An Ethnography of Geopolitics.” PhD, Rutgers University, 2022. <https://doi.org/doi:10.7282/t3-9a42-8d27>.
- Edmondson, Ray. *Audiovisual Archiving: Philosophy and Principles*. Third Edition. Paris and Bangkok: UNESCO and UNESCO Office Bangkok, 2016. <https://unesdoc.unesco.org/ark:/48223/pf0000243973>.
- . “Raising Awareness on Climate Change.” Pittsburgh, PA, 2016.
- Edwards, Paul N. *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming*. Cambridge, MA: MIT Press, 2010.
- Egbert, Helena. “Frustrating But Hopefully Not Futile: Lessons in HVAC Systems and Implementing Change.” Washington, DC, 2023. [https://whova.com/portal/saar\\_202307/videos/4YjMzjkjMycjM/](https://whova.com/portal/saar_202307/videos/4YjMzjkjMycjM/).
- Egbuji, Angel. “Risk Management of Organisational Records.” *Records Management Journal* 9, no. 2 (August 1999): 93–116. <https://doi.org/10.1108/EUM00000000007245>.
- Engel, Patricia. “Applicability of Traditional Storage Methods in Indonesia for Today’s Conservation Practice.” *IFLA Journal* 48, no. 2: Special Issue: Preservation storage and curation strategies (June 2022): 339–48. <https://doi.org/10.1177/03400352211023077>.
- England, Elizabeth. “The Archive of Place and Land Art as Archive: A Case Study of Spiral Jetty.” *The American Archivist* 80, no. 2 (Fall/Winter 2017): 336–54. <https://doi.org/10.17723/0360-9081-80.2.336>.

- Engvall, Tove. "Records Roles in Corporate Sustainability Reporting: An Explorative Study of Corporate Sustainability Reporting from an Archives and Information Science Perspective." Master by Research, Mid Sweden University, 2019. <https://urn.kb.se/resolve?urn=urn%3Anbn%3Ase%3Aamiun%3Adiva-36765>.
- Enomoto, Joy Lehanani, and D. Keali'i MacKenzie. "Saltwater Archives: Native Knowledge in a Time of Rising Tides." In *Routledge Handbook of Postcolonial Politics*, edited by Olivia Rutazibwa and Robbie Shilliam, 289–301. New York: Routledge, 2018.
- Erde, John. "Constructing Archives of the Occupy Movement." *Archives and Records* 35, no. 2 (2014): 77–92. <https://doi.org/10.1080/23257962.2014.943168>.
- Erdrich, Louise. *Future Home of the Living God: A Novel*. First Harper Perennial olive edition. New York: Harper Perennial, 2020.
- Eriksen, Thomas Hylland. *Boomtown: Runaway Globalisation on the Queensland Coast*. London: Pluto Press, 2018.
- Erwin, Tracey, Julie Sweetkind-Singer, and Mary Lynette Larsgaard. "The National Geospatial Digital Archives—Collection Development: Lessons Learned." *Library Trends* 57, no. 3 (Winter 2009): 490–515. <https://doi.org/10.1353/lib.0.0049>.
- Estes, Nick. *Our History Is the Future: Standing Rock versus the Dakota Access Pipeline, and the Long Tradition of Indigenous Resistance*. London: Verso, 2019.
- Eulenberg, Julia Niebuhr. "Disaster Recovery Planning for the Corporate Archive." In *Corporate Archives and History: Making the Past Work*, edited by Arnita A. Jones and Philip L. Cantelon, 91–108. Malabar, FL: Krieger Publishing Company, 1993.
- Evans, Lois M. "Leveraging Information Governance and Digital Technologies for Climate Action: An Inquiry into Records Retention and Disposition in Canadian Organizations." PhD, University of British Columbia, 2022. [10.14288/1.0413056](https://doi.org/10.14288/1.0413056).
- . "Sometimes, Green Is the Outcome: Climate Action in Records Management and Archives in Canada." *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 240–68. <https://doi.org/10.1108/RMJ-12-2020-0041>.
- Evans, Rebecca. "Fantastic Futures? Cli-Fi, Climate Justice, and Queer Futurity." *Resilience: A Journal of the Environmental Humanities* 4, no. 2-3: Environmental Futurity (Spring-Fall 2017): 94–110.
- Ewalt, Jillian M. "The Veins That Lighten Dearth: Documenting Hidden Collections in Rural California." *Journal of Western Archives* 12, no. 2 (2021): Article 1.
- Ezennia, S. E. "The Harmattan and Library Resources Management in Nigeria: An Appraisal of the Effects, Problems and Prospect." *Library & Archival Security* 9, no. 2 (1989): 43–48. [https://doi.org/10.1300/J114v09n02\\_04](https://doi.org/10.1300/J114v09n02_04).
- Ezennia, Steve E. "Flood, Earthquake, Libraries and Library Materials." *Library & Archival Security* 13, no. 1 (1995): 21–27. [https://doi.org/10.1300/J114v13n01\\_03](https://doi.org/10.1300/J114v13n01_03).
- Ezennia, Steve E., and Emma O. Onwuka. "The Battle for Preservation of Library Materials in Nigeria." *Library & Archival Security* 13, no. 1 (1995): 29–39. [https://doi.org/10.1300/J114v13n01\\_04](https://doi.org/10.1300/J114v13n01_04).
- Fachinger, Petra. "Anishinaabemowin in *Indianland*, *The Marrow Thieves*, and *Crow Winter* as a Key to Cultural and Political Resistance." *Studies in Canadian Literature* 46, no. 2 (August 2022): 127–49. <https://doi.org/10.7202/1091105ar>.
- Fallon, Helen. "Ringling the Ogoni Bells: The Ken Saro-Wiwa Archive." *CILIP Update*, May 2016.

- Faruque, M. Omar. "Confronting Neoliberal Resource Policy: Mining Conflict and Coal Politics in Bangladesh." In *Social Movements Contesting Natural Resource Development*, edited by John F. Devlin, 60–82. New York: Routledge, 2020.
- Fatorić, Sandra, and Robbert Biesbroek. "Adapting Cultural Heritage to Climate Change Impacts in the Netherlands: Barriers, Interdependencies, and Strategies for Overcoming Them." *Climatic Change* 162 (2020): 301–20. <https://doi.org/10.1007/s10584-020-02831-1>.
- Fatorić, Sandra, and Erin Seekamp. "Are Cultural Heritage and Resources Threatened by Climate Change? A Systematic Literature Review." *Climatic Change* 142, no. 1–2 (March 2017): 227–54. <https://doi.org/10.1007/s10584-017-1929-9>.
- . "Securing the Future of Cultural Heritage by Identifying Barriers to and Strategizing Solutions for Preservation under Changing Climate Conditions." *Sustainability* 9, no. 11 (November 2017). <https://doi.org/10.3390/su9112143>.
- Faulkhead, Shannon, and Kirsten Thorpe. "Dedication: Archives and Indigenous Communities." In *Research in the Archival Multiverse*, edited by Anne J. Gilliland, Sue McKemmish, and Andrew J. Lau, 2–15. Clayton, Victoria: Monash University Publishing, 2017.
- Faulkner, James, Liuxing Lu, and Jiangping Chen. "Archivists' Golden Egg: Environmental Sustainability Practices of Archives." *The Electronic Library* 39, no. 2 (2021): 258–80. <https://doi.org/10.1108/EL-09-2020-0260>.
- Faundeen, John L. "Appraising U.S. Geological Survey Science Records." *Archival Issues* 32, no. 1 (2010): 7–22.
- Felima, Crystal. "S2 E3: How We Tell the Story of Disaster." Interview by Nicole Kang Ferraiolo. Podcast, 20:53, December 18, 2020. Material Memory. <https://material-memory.clir.org/2020/12/18/s2-e3-how-we-tell-the-story-of-disaster/>.
- Feliz Leon, Luis. "Will the Clean Energy Auto Economy Be Built on Factory Floors Riddled With Toxic Chemicals and Safety Hazards?" In *These Times*, August 30, 2023. <https://inthesetimes.com/article/ultium-cells-uaw-gm-ford-stellantis-electric-vehicles>.
- Fellman, Isaac R. "'Life-Now': James Tiptree, Joanna Russ, and the Queer Meaning of Archives." In *the Library With the Lead Pipe*, July 11, 2018. <https://www.inthelibrarywiththeleadpipe.org/2018/life-now/>.
- Fernandez, Lauren, and J. Timothy Sprehe. "Integrating an ERDM in an IT Environment." *Information Management Journal* 37, no. 4 (August 2003): 58–65.
- Fero, Jessica, David H. Duncan, and Stephanie Spry. "Evaluating the Performance of a Centralised Government Geodatabase in Capturing Publicly-Funded Natural Resource Management Activities in Victoria, Australia." *Australasian Journal of Environmental Management* 20, no. 2 (2013): 101–15. <https://doi.org/10.1080/14486563.2013.764590>.
- Ferraiolo, Nicole Kang. "S2 E1: Does It Matter? Cultural Memory and the Climate Crisis." Podcast, 19:52, November 9, 2020. Material Memory. <https://material-memory.clir.org/2020/11/09/does-it-matter/>.
- Ferraiolo, Nicole Kang, and Lizzi Albert. "S2 E8: What We've Learned and What We Can Do." Podcast, 39:33, April 29, 2021. Material Memory. <https://material-memory.clir.org/s2-e8-what-weve-learned-and-what-we-can-do/>.
- Ferraiolo, Nicole Kang, and Jodi Reeves Eyre. "To Be Part of the Climate Solution, We Must Center Communities." *CLIR* (blog), August 14, 2019. <https://www.clir.org/2019/08/to-be-part-of-the-climate-solution-we-must-center-communities/>.

- Fic, Christy. "Working as an Embedded Archivist in an Undergraduate Course: Transforming Students into Scholars through an Archival Workshop Series." *The American Archivist* 81, no. 2 (Fall/Winter 2018): 290–309. <https://doi.org/10.17723/0360-9081-81.2.290>.
- Figgins, Kristen. "'The Integrity of Nature': A Comparative Analysis of Environmental Anxieties in the Fictions of H.P. Lovecraft and Jeff VanderMeer." In *Fiction and the Sixth Mass Extinction: Narrative in an Era of Loss*, edited by Jonathan Elmore, 49–66. Lanham, MD: Lexington Books, 2020.
- Finch, Elsie T. Freeman. "Buying Quarter Inch Holes: Public Support Through Results." *The Midwestern Archivist* 10, no. 2 (1985): 89–97.
- Finn, Jeanine, and Catalina Lopez. "Bending Water Project at the Claremont Colleges." In *Wading Through the Past: Infrastructure, Indigeneity & the Western Water Archives*, edited by Char Miller. Claremont, CA: The Claremont Colleges Library, 2021. <https://pressbooks.claremont.edu/westernwatersymposium/chapter/jeanine-finn-and-catalina-lopez-bending-water-project-at-the-claremont-colleges/>.
- Finn, Megan, Daniela K. Rosner, Suzanne Black, Nathan Cunningham, Kristin N. Dew, Josephine Hoy, Kevin McCraney, and Colin Morgan. "Troubled Worlds: A Course Syllabus about Information Work and the Anthropocene." *Journal of Critical Library and Information Studies* 3, no. 1: Libraries and Archives in the Anthropocene (2020). <https://doi.org/10.24242/jclis.v3i1.137>.
- Fitzgerald, Jenrose Dawn. "Citizens, Experts and the Economy: The Grassroots Takeover of Kentucky's Agricultural Future." PhD, Rensselaer Polytechnic Institute, 2005.
- Fixico, Donald L. "The Native American Researcher: Another View of Historical Documents." *The Midwestern Archivist* 8, no. 2 (1983): 5–15.
- Fleischer, S. Victor, and Mark J. Heppner. "Disaster Planning for Libraries and Archives: What You Need to Know and How to Do It." *Library & Archival Security* 22, no. 2 (2009): 125–40. <https://doi.org/10.1080/01960070902904167>.
- Flieder, Françoise. "Protection of Archival Documents Against the Effects of Tropical Climates." In *A Manual of Tropical Archivology*, edited by Yves Pérotin, translated by Keith Booth, 93–108. Paris: Mouton & Co., 1966.
- Fooh, Rita Tjien. "Capacity Building on Preservation of Documentary Heritage and Disaster Risk Reduction for Memory Institutions." In *Preservation of Documentary Heritage through Policy Development and Capacity Building*, 30–31. Paris: UNESCO Memory of the World (MoW) Programme, 2022. <https://unesdoc.unesco.org/ark:/48223/pf0000380655>.
- Force, Marie. "Company History: Corporate Archives' Public Outreach on Fortune 100 Company Websites." *Provenance, Journal of the Society of Georgia Archivists* 27, no. 1 (January 2009): 24–50.
- Fordyce, Lauren. "Birthing the Diaspora: Technologies of Risk Among Haitians in South Florida." PhD, University of Florida, 2008. <https://ufdc.ufl.edu/UFE0022044/00001/images>.
- Fortun, Kim. *Advocacy After Bhopal: Environmentalism, Disaster, New Global Orders*. Chicago: University of Chicago Press, 2001.
- Fortun, Kim, and Mike Fortun. "Scientific Imaginaries and Ethical Plateaus in Contemporary U.S. Toxicology." *American Anthropologist* 107, no. 1 (March 2005): 43–54. <https://doi.org/10.1525/aa.2005.107.1.043>.
- Fortun, Kim, Mike Fortun, Angela Hitomi Skye Crandall Okune, Tim Schütz, and Shan-Ya Su. "Civic Community Archiving with the Platform for Experimental Collaborative Ethnography: Double Binds and Design Challenges." In *HCI 2021: Culture and Computing. Design*

- Thinking and Cultural Computing*, edited by Matthias Rauterberg, 36–55. Virtual Conference: Springer, Cham, 2021. [https://doi.org/10.1007/978-3-030-77431-8\\_3](https://doi.org/10.1007/978-3-030-77431-8_3).
- Foster, Anne L. “Minimum Standards Processing and Photograph Collections.” *Archival Issues* 30, no. 2 (2006): 107–18.
- Fraimow, Rebecca. “Disaster Planning: Do Something.” *Project\_arcc* (blog), October 19, 2015. <https://projectarcc.org/2015/10/19/disaster-planning-do-something/>.
- . “Doomsday Preppers.” *Project\_arcc* (blog), July 23, 2015. <https://projectarcc.org/2015/07/23/doomsday-preppers/>.
- Frank, Susi K., and Kjetil A. Jakobsen. “Introduction: The Arctic as an Archive.” In *Arctic Archives: Ice, Memory and Entropy*, edited by Susi K. Frank and Kjetil A. Jakobsen, 10–17. Bielefeld, Germany: transcript, 2019.
- Freeman, Eric, Scott D. Woodruff, Steven J. Worley, Sandra J. Lubker, Elizabeth C. Kent, William E. Angel, David I. Berry, et al. “ICOADS Release 3.0: A Major Update to the Historical Marine Climate Record.” *International Journal of Climatology* 37, no. 5 (April 2017): 2211–32. <https://doi.org/10.1002/joc.4775>.
- Friedrichs, Jörg. “Peak Energy and Climate Change: The Double Bind of Post-Normal Science.” *Futures* 43 (2011): 469–77. <https://doi.org/10.1016/j.futures.2010.12.004>.
- Frogner, Raymond O. “The Train from Dunvegan: Implementing the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) in Public Archives in Canada.” *Archival Science* 22 (2022): 209–38. <https://doi.org/10.1007/s10502-021-09373-0>.
- Gallagher, Connell B. “A Repository Archivist on Capitol Hill.” *The Midwestern Archivist* 16, no. 1 (1991): 49–58.
- García-Herrera, Ricardo, David Barriopedro, David Gallego, Javier Mellado-Cano, Dennis Wheeler, and Clive Wilkinson. “Understanding Weather and Climate of the Last 300 Years from Ships’ Logbooks.” *Wiley Interdisciplinary Reviews: Climate Change* 9, no. 6 (December 2018): e544. <https://doi.org/10.1002/wcc.544>.
- Garinger, Laura Elsie. “Flora and *Fonds*: Activating Herbaria as Archives.” Master of Arts, University of Manitoba, 2021. <http://hdl.handle.net/1993/35824>.
- Gasser, Michael, Nicole Graf, and Christian John Huber. “Sunspot Observations and Glacier Images. Archival Research Partnerships Focusing on Modern Climate Research.” *Comma* 2021, no. 2 (2023): 283–96. <https://doi.org/10.3828/coma.2021.27>.
- Gautam, Nishi, and Edward J. Carberry. “Employee Activism in the High-Tech Sector: Exploring the Factors for Effective Institutional Change within Corporations.” Hamburg, Germany, 2020.
- Gerber-Margie, Dana. “A Green Archivist’s Happy Home.” *Project\_arcc* (blog), September 4, 2015. <https://projectarcc.org/2015/09/04/a-green-archivists-happy-home/>.
- . “ProjectARCC Attends #SAA15!” *Project\_arcc* (blog), August 17, 2015. <https://projectarcc.org/2015/08/17/projectarcc-attends-saa15/>.
- Ghaddar, J. J. “Provenance in Place: Crafting the Vienna Convention for Global Decolonization and Archival Repatriation.” In *Disputed Archival Heritage*, edited by James Lowry, 49–86. London: Routledge, 2023.
- . “*Total Archives* for Land, Law and Sovereignty in Settler Canada.” *Archival Science*, no. 21 (2021): 59–82. <https://doi.org/10.1007/s10502-020-09353-w>.
- Ghaddar, J. J., and Michelle Caswell. “‘To Go Beyond’: Towards a Decolonial Archival Praxis.” *Archival Science* 19, no. 2 (June 2019): 71–85. <https://doi.org/10.1007/s10502-019-09311-1>.

- Giannikou, Maria. "Flood Risk Analysis and Assessment: The Case of the General State Archives of Greece." Athens, Greece: International Federation of Library Associations and Institutions, 2019. <https://library.ifla.org/id/eprint/2518>.
- Gillesse, Robert, Arie Groen, Eva Van Den Hurk-Van't Klooster, Tamara van Zwol, and Lotte Wijsman. "The CO<sub>2</sub> Emissions of Storage and Use of Digital Objects and Data. Exploring Climate Actions." In *Proceedings of the 18th International Conference on Digital Preservation 2022*, 371–73. Glasgow, Scotland: Digital Preservation Coalition, 2022. <https://doi.org/10.7207/ipres2022-proceedings>.
- Gilliland, Anne J. "Trust Matters." *Provenance, Journal of the Society of Georgia Archivists* 35, no. 2 (2019): 4–31.
- Gilliland, Anne J., and Sue McKemmish. "Recordkeeping Metadata, the Archival Multiverse, and Societal Grand Challenges." In *DCMI'12: Proceedings of the 2012 International Conference on Dublin Core and Metadata Applications*, edited by Schubert Shou Boon Foo and Hans Overbeek, 106–15. Kuching, Sarawak, Malaysia: Dublin Core Metadata Initiative, 2012. <https://doi.org/10.5555/2771179.2771192>.
- Gilliland, Anne, and Sue McKemmish. "Building an Infrastructure for Archival Research." *Archival Science* 4 (2004): 149–97. <https://doi.org/10.1007/s10502-006-6742-6>.
- Godfrey, Bruce, and Jeremy Kenyon. "The USDA's NAIP Imagery in Idaho: A Decade of Evolving Partnerships to Improve Access." *Library Trends* 65, no. 3: Collaboration in Agricultural Librarianship and Information Work (Winter 2017): 414–28. <https://doi.org/10.1353/lib.2017.0009>.
- Goldman, Ben. "Archival Emissions: Calculating the Environmental Impact of Collections Storage." Virtual Conference, 2022.
- . "It's Not Easy Being Green(e): Digital Preservation in the Age of Climate Change." In *Archival Values: Essays in Honor of Mark A. Greene*, edited by Christine Weideman and Mary Caldera, 174–87. Chicago, IL: Society of American Archivists, 2019.
- . "Review of Sustainable Thinking: Ensuring Your Library's Future in an Uncertain World." *Journal of Contemporary Archival Studies* 6 (2019): Article 30.
- . "Things the Grandchildren Should Know: Archives and the Origin of an Ecocentric Future." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-s01-i005>.
- Goldman, Ben, Eira Tansey, and Whitney Ray. "Gathering and Documenting Archival Repository Location Data." New Orleans, LA, 2018. <https://repositorydata.wordpress.com/2018/06/29/rbms-2018-presentation/>.
- Goldman, Benjamin, Abbie La Porta, and Hudson Avery Wagner. "Penn State University Libraries Greenhouse Gas Inventory." State College, PA: Penn State University Libraries, August 2021. ScholarSphere. <https://doi.org/10.26207/bp4g-3p45>.
- Golebiewski, Matthew. "Mitigating Catastrophic Risk from Climate Change Through Policy and Technology: What You Can Do Now." Virtual Conference, 2022.
- Goods, Caleb. "Climate Change and Employment Relations." *Journal of Industrial Relations* 59, no. 5 (November 2017): 670–79. <https://doi.org/10.1177/0022185617699651>.
- Gordon-Clark, Matthew. "Paradise Lost? Pacific Island Archives Threatened by Climate Change." *Archival Science* 12, no. 1 (March 2012): 51–67. <https://doi.org/10.1007/s10502-011-9144-3>.
- Gordon-Clark, Matthew, and Simon Shurville. "To Take up Arms against a Sea of Troubles': Finding Safe Havens for the National Archives of Low-Elevation Pacific Islands and Nations Threatened by Climate Change." *Archives and Manuscripts* 38, no. 1 (May 2010): 78–93.

- Grant, Sonia. "Securing Tar Sands Circulation: Risk, Affect, and Anticipating the Line 9 Reversal." *Environment and Planning D: Society and Space* 32 (2014): 1019–35. <https://doi.org/10.1068/d13144p>.
- . "The Kalamazoo River Spill: Pipelines, Politics, and Economies of Knowledge." Master of Arts, University of Toronto, 2014. <https://hdl.handle.net/1807/67911>.
- Grassé, Pierre-P. "Protection of Archival Documents Against the Effects of Tropical Climates." In *A Manual of Tropical Archivology*, edited by Yves Pérotin, translated by Keith Booth, 109–20. Paris: Mouton & Co., 1966.
- Gray, David P. "A Technique for Manuscript Collection Development Analysis." *The Midwestern Archivist* 7, no. 2 (1987): 91–103.
- Greene, Mark, and Dennis Meissner. "More Product, Less Process: Revamping Traditional Archival Processing." *The American Archivist* 68, no. 2 (September 1, 2005): 208–63. <https://doi.org/10.17723/aarc.68.2.c741823776k65863>.
- Greenwalt, Dustin A., and Brian Creech. "Nostalgic Environmentalities in the EPA's Documerica and State of the Environment Projects." *Visual Communication* 19, no. 4 (November 2020): 458–82. <https://doi.org/10.1177/1470357218779119>.
- Greiner, Rachel Elise. "'We Call to the Voices of Waialua': Envisioning a Waialua Heritage Center Connecting Past, Present and Future." Master of Arts, University of Hawai'i at Mānoa, 2021. <http://hdl.handle.net/10125/75875>.
- Grenerson, Geir, Kjell Kemi, and Steinar Nilsen. "Landscapes as Documents: The Relationship between Traditional Sámi Terminology and the Concepts of Document and Documentation." *Journal of Documentation* 72, no. 6 (2016): 1181–96. <https://doi.org/10.1108/JD-01-2016-0010>.
- Grindley, Neil, Kris Carpenter Negulescu, William Kilbride, Diane Macdonald, and David Rosenthal. "How Green Is Digital Preservation?" Vienna, Austria, 2010. <https://www.ifs.tuwien.ac.at/dp/ipres2010/img/GrindleyGreenPreservationPanel.pdf>.
- Guha, Ramachandra. *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya*. Berkeley, CA: University of California Press, 2000.
- Gunnlaugsdottir, Johanna. "Reasons for the Poor Provision of Information by the Government: Public Opinion." *Records Management Journal* 26, no. 2 (2016): 185–205. <https://doi.org/10.1108/RMJ-03-2015-0013>.
- Gutiérrez-de-Armas, Judit. "Archival Practices in Early Modern Spain: Transformation, Destruction and (Re)Construction of Family Archives in the Canary Islands." *Archives and Manuscripts* 48, no. 1 (2020): 5–24. <https://doi.org/10.1080/01576895.2019.1604243>.
- Gwam, Lloyd C. "The Construction of Archive Buildings in Tropical Countries." In *A Manual of Tropical Archivology*, edited by Yves Pérotin, 77–92. Paris: Mouton & Co., 1966.
- Hagerty, Kieran. "Representing Biases, Inequalities and Silences in National Web Archives: Social, Material and Technical Dimensions." *Archives and Manuscripts* 50, no. 1 (2022): 31–45. <https://doi.org/10.37683/asa.v50.10209>.
- Hahn, Ariel. "Refusing Growth: Cloud Technology, Climate Change, and the Future of Libraries and Archives." In *Land in Libraries: Toward a Materialist Conception of Education*, edited by Lydia Zvyagintseva and Mary Greenshields, 167–86. Sacramento, CA: Library Juice Press, 2023.
- Haider, Asad, and Salar Mohandesi. "Workers' Inquiry: A Genealogy." *Viewpoint Magazine*, September 27, 2013. <https://viewpointmag.com/2013/09/27/workers-inquiry-a-genealogy/>.

- Hall, Stuart, Chas Critcher, Tony Jefferson, John Clarke, and Brian Roberts. *Policing the Crisis: Mugging, the State, and Law and Order*. London: Macmillan, 1978.
- Hallman, Christine. "Using Packrat Midden Models to Investigate Climate Variability." *Science Scope* 41, no. 2 (2017): 54–64.
- Hamad, Faten, and Maha Al-Fadel. "Advocacy of the Sustainable Development Goals in Jordanian Academic Libraries." *IFLA Journal* 48, no. 4 (December 2022): 492–509. <https://doi.org/10.1177/03400352211038300>.
- Hamner, Everett. "Angry Optimism: Climate Disaster and Restoration in Kim Stanley Robinson's Alternate Futures." In *The Palgrave Handbook of Twentieth and Twenty-First Century Literature and Science*, edited by Neel Ahuja, Monique Allewaert, Lindsey Andrews, Gerry Canavan, Rebecca Evans, Nihad M. Farooq, Erica Fretwell, et al., 449–67. Cham, Switzerland: Palgrave Macmillan, 2020.
- Hanna, Bridget Corbett. "Toxic Relief: Science, Uncertainty, and Medicine after Bhopal." PhD, Harvard University, 2014. <http://nrs.harvard.edu/urn-3:HUL.InstRepos:12274352>.
- Harper, Janice. "Another Roadside Attraction? Preserving the Cultural Heritage of Oak Ridge, Tennessee." *Anthropology in Action* 12, no. 3 (October 2005): 34–53. <https://doi.org/10.3167/096720105780458963>.
- Harris, Tim. "Buildings for the Future - Sustainable Archive Buildings." *Comma* 2005, no. 1 (January 2005): 1–6. <https://doi.org/10.3828/coma.2005.1.10>.
- Harris, Verne. "Jacques Derrida Meets Nelson Mandela: Archival Ethics at the Endgame." *Archival Science* 11 (March 2011): 113–24. <https://doi.org/10.1007/s10502-010-9111-4>.
- Harter, Christopher, and Patrick Rasico. "File soon. June, 1987": Archival Diasporas and the Urgency to Save During a Climate Emergency. Interview by Petrouchka Moïse and Laura Wilson. Podcast, 53:46, May 6, 2022. FLAME (Future Libraries, Archives, and Museums in Excavation). <https://open.spotify.com/episode/2x5LAFk2NwvuNh9iPUS1Gg>.
- Harvey, P. D. A. "Archives in Britain: Anarchy or Policy?" *The American Archivist* 46, no. 1 (Winter 1983): 22–30. <https://doi.org/10.17723/aarc.46.1.m4174034p84h0310>.
- Hatmaker, Susie. "On Mattering: A Coal Ash Flood and the Limits of Environmental Knowledge." *Environmental Humanities* 4, no. 1 (May 2014): 19–39. <https://doi.org/10.1215/22011919-3614917>.
- Hedva, Johanna. "Sick Woman Theory." *Mask Magazine*, January 2016. <https://web.archive.org/web/20210716212306/http://maskmagazine.com/not-again/struggle/sick-woman-theory>.
- Heidorn, P. Bryan. "Shedding Light on the Dark Data in the Long Tail of Science." *Library Trends* 57, no. 2: Institutional Repositories: Current State and Future (Fall 2008): 280–99. <https://doi.org/10.17723/aarc.46.1.m4174034p84h0310>.
- Henderson, Jane, and Susan Edwards. "Setting Our Direction: Working Together to Develop a National Approach to Conservation of Cultural Heritage in Wales." *Archives and Records* 40, no. 2 (2019): 179–97. <https://doi.org/10.1080/23257962.2018.1563775>.
- Hennig, Reinhard. "An Arctic Archive for the Anthropocene: The Svalbard Global Seed Vault." In *Arctic Archives: Ice, Memory and Entropy*, edited by Susi K. Frank and Kjetil A. Jakobsen, 197–217. Bielefeld, Germany: transcript, 2019.
- Henry, Michael C. "The Conservation<sup>2</sup> Building = Efficiency x Longevity: Non-Mechanical Strategies for Energy-Efficient Collections Environments." Hyattsville, MD, 2011. <https://www.archives.gov/preservation/conferences/2011/presentations/henry.pdf>.

- . “What Will the Cultural Record Say about Us? Stewardship of Culture and the Mandate for Environmental Sustainability.” edited by Melissa Tedone. Austin, TX, 2007.  
<https://web.archive.org/web/20100620112941/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings2008/GAGA07-henry.pdf>.
- Henttonen, Pekka, and Saara Packalén. “Results of Archival Appraisal: A Study of a Finnish City.” *Archival Science*, 2023. <https://doi.org/10.1007/s10502-023-09426-6>.
- Hermann, Burkely. “Interview with Eira Tansey about ‘A Green New Deal for Archives.’” *Issues & Advocacy* (blog), December 1, 2023.  
<https://issuesandadvocacy.wordpress.com/2023/12/01/interview-with-eira-tansey-about-a-green-new-deal-for-archives/>.
- Hernández, Elsa Mariani. Interview: Ana G. Méndez University, Carolina Campus ’s Library. Interview by Dinah M. Wilson Freitas, April 2019.  
<https://scalar.usc.edu/works/prlamrecovery/interviewagmcarolinacampu>.
- Herrada, Julie. “Letters to the Unabomber: A Case Study and Some Reflections.” *Archival Issues* 28, no. 1 (2004 2003): 35–46.
- Herrmann, Victoria. “S2 E4: Climate Displacement and Cultural Resilience.” Interview by Nicole Kang Ferraiolo. Podcast, 23:56, January 21, 2021. Material Memory. <https://material-memory.clir.org/2021/01/21/s2-e4-climate-displacement-and-cultural-resilience/>.
- Hess, David J. “Ethnography and the Development of Science and Technology Studies.” In *Sage Handbook of Ethnography*, edited by Paul Atkinson, Amanda Coffey, Sara Delamont, John Lofland, and Lynn Lofland, 234–45. Thousand Oaks, CA: SAGE Publications, 2001.
- . *Science Studies: An Advanced Introduction*. New York: New York University Press, 1997.
- Hicks, Scott. “Jane Smiley’s A Thousand Acres (1991) and Archival Reimaginings of Eco-Cosmopolitanism.” *Environmental Humanities* 2, no. 1 (May 2013): 1–20.  
<https://doi.org/10.1215/22011919-3610324>.
- Higgins, Sarah, and Christopher I. Higgins. “Data Curation and Agroecology: Examining Data Requirements for Short Supply Chains.” In *Proceedings of the 18th International Conference on Digital Preservation 2022*, 260–65. Glasgow, Scotland: Digital Preservation Coalition, 2022. <https://doi.org/10.7207/ipres2022-proceedings>.
- Hioki, Kazuko. “From Japanese Tradition: Is Kura a Model for a Sustainable Preservation Environment?” edited by Melissa Tedone. Austin, TX, 2007.  
<https://web.archive.org/web/20100620112941/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings2008/GAGA07-hioki.pdf>.
- Hiraide, Lydia. “Libraries and a Brighter Climate Future.” *Living Knowledge* (blog), November 3, 2021. <https://blogs.bl.uk/living-knowledge/2021/11/libraries-and-a-brighter-climate-future.html>.
- Hobbs, Colleen. “Finding Your Family in Federal Record Group 33.6: Navigating the Agricultural Extension Service Archives.” *Archival Issues* 36, no. 2 (2015): 22–35.
- Hocking, John, and Chiara Biagioni. “Out of the Box, into the World: The Contribution of Archives and Archivists to Today’s World.” *Comma* 2016, no. 1–2 (2016): 15–24.  
<https://doi.org/10.3828/comma.2016.2>.
- Hoek, Sophia van. “Walking a Tightrope across the Gap of Digital Preservation and Environmental Sustainability: The National Archives of the Netherlands and the Challenge of Achieving a Climate-Neutral Digital Archive.” Amsterdam: Amsterdam University of the

- Arts, June 13, 2023. <https://kia.pleio.nl/attachment/entity/931f65cb-2058-4fe9-a500-99bc53dfde40>.
- Hof, Cees. “The Threat of the Double Extinction.” *Digital Preservation Coalition* (blog), December 1, 2017. <https://www.dpconline.org/blog/wdpd/the-threat-of-the-double-extinction>.
- Hoffman, Kelly M., Cooper T. Clarke, Hilary Szu Yin Shiue, Phillip Nicholas, Miranda Shaw, and Katrina Fenlon. “Data Rescue: An Assessment Framework for Legacy Research Collections.” Beltsville, MD: National Agricultural Library, September 30, 2020. <https://doi.org/10.13016/1zmx-ghhq>.
- Hoffman, Susanna M. “The Worst of Times, The Best of Times: Toward a Model of Cultural Response to Disaster.” In *The Angry Earth: Disaster in Anthropological Perspective*, edited by Anthony Oliver-Smith and Susanna M. Hoffman, 134–55. New York: Routledge, 1999.
- Hogan, Mél, and Sarah T. Roberts. “Archiving for Extinction.” *Media-N* 19, no. 1: Afterlives of Data (Spring 2023): 7–26. <https://doi.org/10.21900/j.median.v19i1.936>.
- Homa, Christine. “Shenandoah National Park: The Human Cost of Conservation.” *DttP: Documents to the People* 49, no. 3/4 (Fall/Winter 2021): 37–41. <https://doi.org/10.5860/dttp.v49i3/4.7689>.
- Hong, Sung H., Matija Strlič, Ian Ridkely, Konstantinos Ntanos, Nancy Bell, and May Cassar. “Climate Change Mitigation Strategies for Mechanically Controlled Repositories: The Case of the National Archives, Kew.” *Atmospheric Environment* 49 (March 2012): 163–70. <https://doi.org/10.1016/j.atmosenv.2011.12.003>.
- Horner, Melissa, Joaquin Muñoz, and Robert Petrone. “Ni Keehtwawmi Mooshahkinitounawn: Lifting Up Representations of Indigenous Education and Futures in *The Marrow Thieves*.” *Research on Diversity in Youth Literature* 4, no. 1: Representations of Education in Youth (October 2021): Article 7.
- Hou, Chung-Yi, Cheryl A. Thompson, and Carole L. Palmer. “Profiling Open Digital Repositories in the Atmospheric and Climate Sciences: An Initial Survey.” *Proceedings of the American Society for Information Science and Technology* 51, no. 1 (January 2014): 1–4. <https://doi.org/10.1002/meet.2014.14505101121>.
- Houghton-Foster, Helen. “‘It’s Good for Them to Feel Stretched’: Collaborative Volunteer Projects at the Staffordshire Record Office.” *Archives and Records* 44, no. 1 (2023): 120–37. <https://doi.org/10.1080/23257962.2022.2139229>.
- . “Learning from the Past: Exploiting Archives for Historical Water Management Research.” PhD, University of Liverpool, 2021. <http://doi.org/10.17638/03140920>.
- Howard, Allaina, and Ruth Duerr. “NOAA’s Climate Database Modernization Program at the National Snow and Ice Data Center.” In *Building Polar Networks: A Strategy for the Future*, edited by Silvia Sarti and Michela Cecconi, 284–87. Rome, Italy, 2006. <https://doi.org/10.7939/R3Z31P46X>.
- Howey, Kirsty, and Timothy Neale. “Divisible Governance: Making Gas-Fired Futures during Climate Collapse in Northern Australia.” *Science, Technology, & Human Values*, January 2022, 1–30. <https://doi.org/10.1177/01622439211072573>.
- Hoyer, Jen, and Nora Almeida. *The Social Movement Archive*. Sacramento, CA: Litwin Books, 2021.
- Hoyle, Michael, and Laura Millar. “Archival Education in the Pacific: The Challenges of Trying to Establish a Distance Education Archives and Records Course in the Pacific Islands.” *Comma* 2005, no. 2 (January 2005): 1–16. <https://doi.org/10.3828/coma.2005.2.4>.

- Hudson, David James. "The Whiteness of Practicality." In *Topographies of Whiteness: Mapping Whiteness in Library and Information Studies*, edited by Gina Schlesselman-Tarango, 203–34. Sacramento, CA: Library Juice Press, 2017.
- Hudson, David James, and Désirée Rochat. "Racial Capitalism and Knowledge Production in LIS: A Conversation with David James Hudson." Presented at the 20th Annual Library Research Forum, Concordia University Library, April 26, 2022. <https://www.youtube.com/watch?v=asUAz0NC4ts>.
- Hughes, J. Donald. "Climate Change: A History of Environmental Knowledge." *Capitalism Nature Socialism* 21, no. 3 (September 2010): 75–80. <https://doi.org/10.1080/10455752.2010.508619>.
- Hughes, Kit. "Appraisal as Cartography: Cultural Studies in the Archives." *The American Archivist* 77, no. 1 (June 3, 2014): 270–96. <https://doi.org/10.17723/aarc.77.1.85175154j4m45578>.
- Iacovino, Livia. "Multi-Method Interdisciplinary Research In Archival Science: The Case Of Recordkeeping, Ethics And Law." *Archival Science* 4 (2004): 267–86. <https://doi.org/10.1007/s10502-005-2595-7>.
- ICOMOS Climate Change and Heritage Working Group. "The Future of Our Pasts: Engaging Cultural Heritage in Climate Action." Paris: International Council on Monuments and Sites, 2019. <https://archive.org/details/cchwgfina/print/page/n1/mode/2up>.
- Ilerbaig, Juan. "Archives as Sediments: Metaphors of Deposition and Archival Thinking." *Archival Science* 21 (2021): 83–95. <https://doi.org/10.1007/s10502-020-09350-z>.
- . "Specimens as Records: Scientific Practice and Recordkeeping in Natural History Research." *The American Archivist* 73, no. 2 (Fall/Winter 2010): 463–82. <https://doi.org/10.17723/aarc.73.2.607470v482172220>.
- Inch, Jeanne E. "Canadian Conservation Institute: Serving Our Clients . . . Preserving Canada's Heritage." *Collections: A Journal for Museum and Archives Professionals* 9, no. 3 (Summer 2013): 283–98.
- Ingwerson, Moritz. "Reclaiming Fossil Ghosts: Indigenous Resistance to Resource Extraction in Works by Warren Cariou, Cherie Dimaline, and Nathan Adler." *Canadian Literature* 240: Decolonial (Re)Visions of Science Fiction, Fantasy, and Horror (2020): 59–78. <https://doi.org/10.14288/cl.vi240.191977>.
- "IPI's Guide to Sustainable Preservation Practices for Managing Storage Environments." Rochester, NY: Image Permanence Institute, July 2012. [https://s3.cad.rit.edu/ipi-assets/publications/sustainable\\_preservation\\_practices/sustainable\\_preservation\\_practices\\_all.pdf](https://s3.cad.rit.edu/ipi-assets/publications/sustainable_preservation_practices/sustainable_preservation_practices_all.pdf).
- "IPI's Methodology for Implementing Sustainable Energy-Saving Strategies in Collections Environments." Rochester, NY: Image Permanence Institute, 2017. [https://s3.cad.rit.edu/ipi-assets/publications/methodology\\_guidebook/methodology\\_guidebook\\_all.pdf](https://s3.cad.rit.edu/ipi-assets/publications/methodology_guidebook/methodology_guidebook_all.pdf).
- Irons, Ellie, and Anne Percoco. "Next Epoch Seed Library: An Archive of Weedy Species." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-s02-i003>.
- Iskander, Natasha N., and Nichola Lowe. "Climate Change and Work: Politics and Power." *Annual Review of Political Science* 23 (May 2020): 111–31. <https://doi.org/10.1146/annurev-polisci-061418-095236>.
- Israel, Robin H., and Jodi Reeves Eyre. "The 2017 WArS/SAA Salary Survey: Initial Results and Analysis." SAA Women Archivists Section, 2017. [https://www2.archivists.org/sites/all/files/WArS\\_Salary\\_Survey\\_Report.pdf](https://www2.archivists.org/sites/all/files/WArS_Salary_Survey_Report.pdf).

- Jackson, Sarah Canby. "Risk in Processing: Harris County Pollution Control Records." Virtual Conference, 2020. [https://static.sched.com/hosted\\_files/archives2020/9a/SAA%202020\\_Session%202A\\_Sarah%20Canby\\_Risk%20In%20Processing.pptx](https://static.sched.com/hosted_files/archives2020/9a/SAA%202020_Session%202A_Sarah%20Canby_Risk%20In%20Processing.pptx).
- Jackson, Zakiyyah Iman. *Becoming Human: Matter and Meaning in an Antiracist World*. New York: New York University Press, 2020.
- Jacobs, Clifford A., and Steven J. Worley. "Data Curation in Climate and Weather: Transforming Our Ability to Improve Predictions through Global Knowledge Sharing." *International Journal of Digital Curation* 4, no. 2 (2009). <https://doi.org/10.2218/ijdc.v4i2.94>.
- Jaffe, Sarah, and Michelle Chen. "Delivery Workers Stuck in Searing Heat." *Belabored*. Accessed August 5, 2022. <https://www.dissentmagazine.org/blog/belabored-delivery-workers-searing-heat/>.
- Jakobsen, Vibeke Sloth, and Kirsten Klüver. "Danmark Ekspeditionen 1906-1908: Literature – Archival Material – Photographs – Links." In *Building Polar Networks: A Strategy for the Future*, edited by Silvia Sarti and Michela Cecconi, 55–63. Rome, Italy, 2006. <https://doi.org/10.7939/R3Z31P46X>.
- James, Erica Caple. *Democratic Insecurities: Violence, Trauma, and Intervention in Haiti*. Berkeley, CA: University of California Press, 2010.
- Jamieson, Krista, Sam Winn, Ted Lee, Fletcher Durant, Jessica Bushey, Itza Carbajal, and Frances Harrell. "#Archivists4ClimateAction: A Look at the Present & Future of Archives and Climate Change." Virtual Conference, 2020.
- Janković, Vladimir. "Montage and Metamorphosis: Climatological Data Archiving and the US National Climate Program." In *Science in the Archives: Pasts, Presents, Futures*, edited by Lorraine Daston, 223–44. Chicago, IL: University of Chicago Press, 2017.
- Janz, Margaret. "Maintaining Access to Public Data: Lessons from Data Refuge." *Against the Grain* 29, no. 6 (December 2017): 30, 32–33.
- Jedlitschka, Rainer. "'Together We Are Strong': Emergency Associations for the Protection of Germany's Cultural Heritage." *The American Archivist* 85, no. 2 (Fall/Winter 2022): 334–58. <https://doi.org/10.17723/2327-9702-85.2.334>.
- Jobin, Paul. "'Nuclear Gypsies' in Fukushima before and after 3/11." In *Nuclear Portraits: Communities, the Environment, and Public Policy*, edited by Laurel Sefton MacDowell, 274–311. Toronto, ON: University of Toronto Press, 2017.
- Jochumsen, Henrik, Jamie Johnston, and Andreas Vårheim. "Pursuing Sustainable Futures through LAMs." In *Libraries, Archives, and Museums in Transition: Changes, Challenges, and Convergence in a Scandinavian Perspective*, edited by Casper Hvenegaard Rasmussen, Kerstin Rydbeck, and Håkon Larsen, 215–28. Abingdon, UK: Routledge, 2022.
- Joguin, Vincent, and Jean-Noël Dumont. "Passive Digital Preservation on Paper in Practice." In *Proceedings of the 18th International Conference on Digital Preservation 2022*, 271–76. Glasgow, Scotland: Digital Preservation Coalition, 2022. <https://doi.org/10.7207/ipres2022-proceedings>.
- Johnson, Eric, and Alicia Kubas. "Spotlight on Digital Government Information Preservation: Examining the Context, Outcomes, Limitations, and Successes of the DataRefuge Movement." *In the Library With the Lead Pipe*, February 7, 2018. <http://www.inthelibrarywiththeleadpipe.org/2018/information-preservation/>.
- Johnston, Barbara Rose. "Action-Research and Environmental Justice: Lessons from Guatemala's Chixoy Dam." In *The Routledge Companion to the Environmental Humanities*,

- edited by Ursula K. Heise, John Christensen, and Michelle Niemann, 174–84. London: Routledge, 2017.
- . “Reparations for Dam Displaced Communities? Report from the Chixoy Dam Legacy Issues Meeting, July 23, 2003, Pacux, Guatemala.” *Capitalism, Nature, Socialism* 15, no. 1 (2004): 113–19. <https://doi.org/10.1080/1045575032000189046>.
- Jokinen, Alexandra. “Digital Preservation, Eh?” *bloggERS!* (blog), February 14, 2017. <https://saaers.wordpress.com/2017/02/14/digital-preservation-eh/>.
- Jones, Ashley. “Sustainability in Library Preservation.” *Technical Services Quarterly* 31, no. 1 (2014): 31–43. <https://doi.org/10.1080/07317131.2014.844631>.
- Jones, Karin Hodgin, Jimi Jones, Robyn Bianconi, and Liam Moran. “The Curricular Asset Warehouse at the University of Illinois: A Digital Archive’s Sustainability Case Study.” In *19th International Conference on Digital Preservation 2023*, 318–19. Champaign-Urbana, IL, 2023.
- Jones, Michael. “From Personal to Public: Field Books, Museums, and the Opening of the Archives.” *Archives and Records* 38, no. 2 (2017): 212–27. <https://doi.org/10.1080/23257962.2016.1269645>.
- Jørgensen, Corinne, Paul F. Marty, and Kathy Braun. “Connecting to Collections in Florida: Current Conditions and Critical Needs in Libraries, Archives, and Museums.” *The Library Quarterly: Information, Community, Policy* 82, no. 4 (October 2012): 453–76.
- Jorgensen, Miriam, and Britnee Johnston. “Tribal Archives.” In *Sustaining and Advancing Indigenous Cultures: Field Surveys and Summits*. Oklahoma City, OK: Association of Tribal Archives, Libraries, and Museums, 2022. <https://www.atalm.org/resources/reports/atalm-reports/#tribal-archives-needs-assessment-report/1/>.
- Jouzel, Jean, and Valérie Masson-Delmotte. “Paleoclimates: What Do We Learn from Deep Ice Cores?” *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 5 (October 2010): 654–69. <https://doi.org/10.1002/wcc.72>.
- Jovanović, Deana. “Prosperous Pollutants: Bargaining with Risks and Forging Hopes in an Industrial Town in Eastern Serbia.” *Ethnos: Journal of Anthropology* 83, no. Issue 3: Economies of growth or ecologies of survival? (2018): 489–504. <https://doi.org/10.1080/00141844.2016.1169205>.
- Jubb, Michael. “Freedom of Information in the UK and Its Implications for Research in the Higher Education Sector.” *International Journal of Digital Curation* 7, no. 1 (March 2012): 57–71. <https://doi.org/10.2218/ijdc.v7i1.214>.
- Jules, Bergis. “Architecting Sustainable Futures: Exploring Funding Models in Community-Based Archives.” New Orleans, LA: Shift Design, February 2019. <https://shiftdesign.org/content/uploads/2019/02/ArchitectingSustainableFutures-2019-report.pdf>.
- Kabo, Raphael. “‘Life! Life!’: The Precarious Utopianism of Kim Stanley Robinson’s *New York 2140*.” *Utopian Studies* 32, no. 2 (August 2021): 252–76. <https://doi.org/10.5325/utopianstudies.32.2.0252>.
- Kabugi, Magana, and Holly Smith. “Memory Work”: Archiving While Black, Changing the Future of the HBCU Landscape. Interview by Ece Turnator and Laura Wilson. Podcast, 49:57, January 21, 2022. FLAME (Future Libraries, Archives, and Museums in Excavation). <https://open.spotify.com/episode/72AVRiBdP6xqWVs8AhzM5M?si=09b6b97784ae4c67>.
- Kafai, Yasmin B., and Anne J. Gilliland-Swetland. “The Use of Historical Materials in Elementary Science Classrooms.” *Science Education* 85, no. 4 (July 2001): 349–67.

- Kain, John. "Tips for Growing a Green Organization." *Information Management Journal* 44, no. 3 (2009): 16–19.
- Kan, Pearl. "Towards a Critical Poiesis: Climate Justice and Displacement." *Virginia Environmental Law Journal* 33, no. 1 (2015): 23–55.
- Kann-Rasmussen, Nanna. "When Librarians Speak up: Justifications for and Legitimacy Implications of Librarians' Engagement in Social Movements." *Journal of Documentation* 79, no. 1 (2023): 36–51. <https://doi.org/10.1108/JD-02-2022-0042>.
- Kanyengo, Christine Wamunyima. "Preservation and Conservation of Information Resources in the University of Zambia Library." *Journal of Archival Organization* 7, no. 3 (2009): 116–28. <https://doi.org/10.1080/15332740903126736>.
- Karasti, Helena, and Karen S. Baker. "Digital Data Practices and the Long Term Ecological Research Program Growing Global." *International Journal of Digital Curation* 3, no. 2 (2008): 42–58. <https://doi.org/10.2218/ijdc.v3i2.57>.
- Katzeman, Aaron. "An Archival Art Project about Climate Change and Internet (In)Visibility." *Mānoa Horizons* 3 (Fall 2018): 7–12.
- Kaufman, Casey Davis. "Advocating for Climate Action: A Professional Responsibility and Moral Obligation." Pittsburgh, PA, 2016.
- Kemball, Anna. "Biocolonial Pregnancies: Louise Erdrich's *Future Home of the Living God*." *Medical Humanities* 48, no. 2 (June 2022): 159–68. <https://doi.org/10.1136/medhum-2021-012250>.
- Kenga, Maureen. "Digital Accessibility, Inclusion and Diversity: Digitization of Indigenous Agricultural Knowledge in Shaping Food Security across the Kenyan Coastal Region." In *19th International Conference on Digital Preservation 2023*, 336–38. Champaign-Urbana, IL, 2023.
- Kenner, Alison Marie. "Breathtaking: Contemporary Figures of U.S. Asthma Care." PhD, Rensselaer Polytechnic Institute, 2011. <https://hdl.handle.net/20.500.13015/3337>.
- Kenney, Andrew. "2,000 Boxes of Colorado Archives Documents to Be Checked for Damage after Multiple Pipes Leak." Colorado Public Radio, December 27, 2022. <https://www.cpr.org/2022/12/27/colorado-archives-water-leak/>.
- Keough, Brian, and Amy C. Schindler. "Thinking Globally, Acting Locally: Documenting Environmental Activism in New York State." *Archival Issues* 28, no. 2 (2004 2003): 121–35.
- Khayat, Mohammad, and Steven J. Kempler. "Life Cycle Management Considerations of Remotely Sensed Geospatial Data and Documentation for Long Term Preservation." *Journal of Map & Geography Libraries* 11, no. 3: Geospatial Data Management, Curation, and Preservation-Part 2 (2015): 271–88. <https://doi.org/10.1080/15420353.2015.1072122>.
- Kilbride, William. "A Foot in the Door Is Worth Two on the Desk." *Digital Preservation Coalition* (blog), November 22, 2021. <https://www.dpconline.org/blog/a-foot-in-the-door-is-worth-two-on-the-desk>.
- . "Breaking Down Barriers: World Digital Preservation Day 2021." *Digital Preservation Coalition* (blog), November 3, 2021. <https://www.dpconline.org/blog/wdpd/wkilbride-wdpd21>.
- . "Coda and Canon: World Digital Preservation Day 2023." *Digital Preservation Coalition* (blog), November 3, 2023. <https://www.dpconline.org/blog/wdpd/wdpd2023-kilbride-finale>.

- . “Digital Preservation and Climate Change: Provocation to and from COP26.” *Digital Preservation Coalition* (blog), November 22, 2021. <https://www.dpconline.org/blog/digital-preservation-and-climate-change-provocation-to-and-from-cop26>.
- . “Digital Preservation and Environmental Sustainability: Five Themes for the Future.” *Digital Preservation Coalition* (blog), December 3, 2021. <https://www.dpconline.org/blog/environmental-digipres-for-ripdasa>.
- . “DP Disrupted: A Blue Shield for the Electronic Battlefield.” *Digital Preservation Coalition* (blog), April 3, 2023. <https://www.dpconline.org/blog/dp-disrupted-a-blue-shield-for-the-electronic-battlefield>.
- . “Here Comes the Tide.” *Digital Preservation Coalition* (blog), November 2010. <https://www.dpconline.org/blog/whats-new-issue-31-november-2010#Editorial31>.
- . “Memories from the Anthropocene: Digital Preservation in a Time of Climate Crisis.” *Digital Preservation Coalition* (blog), November 4, 2022. <https://www.dpconline.org/blog/memories-from-the-anthropocene-digital-preservation-in-a-time-of-climate-crisis>.
- . “On Being a Good Ancestor.” *Digital Preservation Coalition* (blog), November 5, 2021. <https://www.dpconline.org/blog/wdpd/wkilbride-wdpd21-closing>.
- . “The Anthropocene Remembered: Digital Memory After the Climate Crisis.” *Digital Preservation Coalition* (blog), May 26, 2023. <https://www.dpconline.org/blog/the-anthropocene-remembered-digital-memory-after-the-climate-crisis>.
- Kim, Hee-Eun. “Changing Climate, Changing Culture: Adding the Climate Change Dimension to the Protection of Intangible Cultural Heritage.” *International Journal of Cultural Property* 18 (2011): 259–90. <https://doi.org/10.1017/S094073911100021X>.
- Kim, Sarah. “Green Archives: Applications of Green Construction to Archival Facilities.” *The Primary Source* 28, no. 1 (2009): Article 3. <https://doi.org/10.18785/ps.2801.03>.
- Kim, Tammi, and Karla Irwin. “Learning from Las Vegas: Adapting Workflows for Managing Born-Digital Design Records.” *The American Archivist* 84, no. 2 (Fall/Winter 2021): 355–73. <https://doi.org/10.17723/0360-9081-84.2.355>.
- Kinnaman, Alex, and Alan Munshower. “Green Goes with Anything: Decreasing Environmental Impact of Digital Libraries at Virginia Tech.” In *Proceedings of the 18th International Conference on Digital Preservation 2022*, 89–98. Glasgow, Scotland: Digital Preservation Coalition, 2022. <https://doi.org/10.7207/ipres2022-proceedings>.
- Kisling, Jr., Vernon N. “Libraries and Archives in the Historical and Professional Development of American Zoological Parks.” *Libraries & Culture* 28, no. 3 (Summer 1993): 247–65.
- Klimenko, Marina. “Beyond ‘The Last Doubler’: Reproductive Futurism and the Politics of Care in Larissa Lai’s *The Tiger Flu*.” *Studies in Canadian Literature / Études En Littérature Canadienne* 45, no. 2: Neoliberal Environments (2020): 161–80. <https://doi.org/10.7202/1080278ar>.
- Kneese, Tamara. “Climate Justice & Labor Rights Part I: AI Supply Chains and Workflows.” AI Now Institute, August 2, 2023. <https://ainowinstitute.org/general/climate-justice-and-labor-rights-part-i-ai-supply-chains-and-workflows>.
- . “Climate Justice & Labor Rights Part II: Labor Organizing and Environmental Justice in Tech, Past and Present.” AI Now Institute, August 3, 2023. <https://ainowinstitute.org/general/climate-justice-and-labor-rights-part-2-labor-organizing-and-environmental-justice-in-tech-past-and-present>.

- Kornbluh, Anna. "Climate Realism, Capitalist and Otherwise." *Mediations: Journal of the Marxist Literary Group* 33, no. 1-2: Realism Reevaluated (Fall /Spring 2020 2019): 99–118.
- Kosciejew, Marc. "The Concept of Natureculture Document: A Conceptual Exploration of Seeds, Embodied Information, and Unconventional Records." *The Journal of Contemporary Archival Studies* 7 (2020): Article 15.
- Krauss, Werner. "Escaping the Double Bind: From the Management of Uncertainty Toward Integrated Climate Research." In *Anthropology and Climate Change: From Actions to Transformations*, edited by Susan A. Crate and Mark Nuttall, 413–23. New York: Routledge, 2016.
- . "European Landscapes: Heritage, Participation and Local Communities." In *The Ashgate Research Companion to Heritage and Identity*, edited by Brian J. Graham and Peter Howard, 425–38. Burlington, VT: Ashgate Publishing Company, 2008.
- Kriesberg, Adam, and Jacob Kowall. "US–Soviet Fisheries Research during the Cold War: Data Legacies." *Archival Science* 23 (2023): 7–28. <https://doi.org/10.1007/s10502-022-09398-z>.
- Kutay, Cat. "Locating Knowledge." *Archives and Manuscripts* 47, no. 1 (2019): 72–93. <https://doi.org/10.1080/01576895.2018.1551143>.
- Lachney, Michael, Madison C. Allen, and Briana P. Green. "The Double Bind of Constructionism: A Case Study on the Barriers for Constructionist Learning in Pre-College Engineering Education," Paper ID #29179. Virtual Conference, 2020. <https://monolith.asee.org/public/conferences/172/papers/29179/view>.
- Lachney, Michael, Liz O. Boltz, Brittany Dillman, Candace Robertson, and Aman Yadav. "Local Classrooms, Global Technologies: Toward the Integration of Sociotechnical Macroethical Issues Into Teacher Education." *Bulletin of Science, Technology & Society* 38, no. 1–2 (June 2018): 13–22. <https://doi.org/10.1177/0270467620902972>.
- Ladino, Jennifer K. "Mountains, Monuments, and Other Matter: Environmental Affects at Manzanar." *Environmental Humanities* 6, no. 1 (May 2015): 131–57. <https://doi.org/10.1215/22011919-3615925>.
- Lage, Kathryn, Barbara Losoff, and Jack Maness. "Receptivity to Library Involvement in Scientific Data Curation: A Case Study at the University of Colorado Boulder." *Portal: Libraries and the Academy* 11, no. 4 (October 2011): 915–37.
- Laherty, Jennifer, and Gary Motz. "Boundless Use of Indiana University's Biological Research Collections Possible in Partnership with IU Libraries." Columbus, OH: International Federation of Library Associations and Institutions, 2016. <https://library.ifla.org/id/eprint/1958>.
- Lai, Larissa. "Familiarizing Grist Village: Why I Write Speculative Fiction." *Canadian Literature*, no. 240: Decolonial (Re)Visions of Science Fiction, Fantasy, and Horror (2020): 20–39. <https://doi.org/10.14288/cl.vi240.192487>.
- . *The Tiger Flu*. Vancouver: Arsenal Pulp Press, 2018.
- Lamdan, Sarah. "Beyond FOIA: Improving Access to Environmental Information in the United States." *Georgetown Environmental Law Review* 29, no. 3 (2017): 481–512.
- . *Environmental Information: Research, Access, and Environmental Decisionmaking*. Washington, DC: Environmental Law Institution, 2017.
- . "Improving Access to Environmental Information and Records." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-i007>.

- . “Lessons from DataRescue: The Limitations of Grassroots Climate Change Data Preservation and the Need for Federal Records Law Reform.” *University of Pennsylvania Law Review Online* 166, no. 1 (2018): Article 12.
- . “Sunshine for Sale: Environmental Contractors and the Freedom of Information Act.” *Vermont Journal of Environmental Law* 15 (2014 2013): 227–61.
- Lamdan, Sarah, and Rebecca Bratspies. “Taking a Page from the FDA’s Prescription Medicine Information Rules: Reimagining Environmental Information for Climate Change.” *University of Arkansas at Little Rock Law Review* 40, no. 4 (2018): Article 4.
- Langelier, Gilles, and Sandra Wright. “Contingency Planning for Cartographic Archives.” *Archivaria* 13: Cartographic Archives (Winter /82 1981): 47–58.
- Langwick, Stacey A. “A Politics of Habitability: Plants, Healing, and Sovereignty in a Toxic World.” *Cultural Anthropology* 33, no. 3 (August 2018): 415–43.  
<https://doi.org/10.14506/ca33.3.06>.
- . “Articulate(d) Bodies: Traditional Medicine in a Tanzanian Hospital.” *American Ethnologist* 35, no. 3 (August 2008): 428–39. <https://doi.org/10.1111/j.1548-1425.2008.00044.x>.
- Laurent, Nicola, Cate O’Neill, and Kirsten Wright. “Convenient Fires and Floods and Impossible Archival Imaginaries Describing the Missing Records of Children’s Institutions.” *Archivaria* 94: Toward Person-Centred Archival Theory and Praxis (Winter 2022): 94–119.
- Lauriault, Tracey P., Barbara L. Craig, D.R. Fraser Taylor, and Peter L. Pulsifer. “Today’s Data Are Part of Tomorrow’s Research: Archival Issues in the Sciences.” *Archivaria* 64 (Fall 2007): 123–79.
- Laver, Tara, and Elaine Smyth. “First Responders: LSU Assists New Orleans with Hurricane Recovery Efforts.” *Archival Outlook*, December 2005.
- Law, John. *After Method: Mess in Social Science Research*. London: Routledge, 2004.
- “Learning Lessons From the Cyber-Attack: British Library Cyber Incident Review.” London: British Library, March 8, 2024. <https://www.bl.uk/home/british-library-cyber-incident-review-8-march-2024.pdf>.
- Lebel, Anne, and Véronique Bigeard. “Construction of an Archive Building in a Tropical Climate: The Saint Martin Media Library and Territorial Archives.” *International Preservation News*, December 2011.
- Leddy, Lianne. “Interviewing Nookomis and Other Reflections: The Promise of Community Collaboration.” *Oral History Forum d’histoire Orale* 30: Talking Green: Oral History and Environmental History (2010).  
<http://www.oralhistoryforum.ca/index.php/ohf/article/view/386>.
- Lee, Yoonhee. “Being Taught to Be Professionals vs. Workers: Critical Consciousness and LIS Education.” Tuscon, AZ, 2022. <https://www.youtube.com/watch?v=KptBLEiq96I>.
- Leinonen, Veli-Antti. “Breaking down Barriers with CSC Climate Negative / Zero Carbon Data Center.” *Digital Preservation Coalition* (blog), November 22, 2021.  
<https://www.dpconline.org/blog/wdpd/wdpd2021-leinonen>.
- Lemmon, Alfred E. “‘Learn from the Past: Build for the Future’: The Historic New Orleans Collection’s Response to Hurricane Katrina.” *Museum Archivist* 22, no. 1 (Winter 2012): 6–9.
- Lennon, Diana, and Theresa Collins. “Borrowing a Bird’s Eye: Teaching Urban-Based Environmental Science with Humanities and Archival Resources.” Brooklyn, NY, 2018.  
<https://doi.org/10.17605/OSF.IO/YTXVG>.

- Letts, Lori, Seanne Wilkins, Mary Law, Debra Stewart, Jackie Bosch, and Muriel G. Westmorland. "Critical Review Form -- Qualitative Studies (Version 2.0)." McMaster University Evidence-Based Practice Research Group, 2007.
- Lev-Alexander, Nancy. "Energy Savings Trial in the Library of Congress John Adams Building Stacks." *Collections: A Journal for Museum and Archives Professionals* 8, no. 4 (Fall 2012): 365–76.
- Leve, Lauren. "'Secularism Is a Human Right!': Double-Binds of Buddhism, Democracy, and Identity in Nepal." In *The Practice of Human Rights: Tracking Law between the Global and the Local*, edited by Mark Goodale and Sally Engle Merry, 78–113. Cambridge: The practice of human rights : tracking law between the global and the local, 2007.
- Levine, Amy. *South Korean Civil Movement Organisations: Hope, Crisis, and Pragmatism in Democratic Transition*. Manchester: Manchester University Press, 2016.
- Linden, Jeremy. "Getting Greener and Creating the Optimal: The State of Sustainability Research and the Preservation Environment." *AIC News*, March 2012.
- . "Sustainable Film Preservation: Can We Have Our Cake and Eat It Too?" Pittsburgh, PA, 2016.
- Lischer-Katz, Zack. "Studying the Materiality of Media Archives in the Age of Digitization: Forensics, Infrastructures and Ecologies." *First Monday* 22, no. 1 (2017). <https://doi.org/10.5210/fm.v22i1.7263>.
- Little, Peter C. "New Toxics Uncertainty and the Complexity Politics of Emerging Vapor Intrusion Risk." In *A Companion to the Anthropology of Environmental Health*, edited by Merrill Singer, 281–301. Chichester, UK: Wiley Blackwell, 2016.
- . *Toxic Town: IBM, Pollution, and Industrial Risks*. New York: New York University Press, 2014.
- . "Vapor Intrusion: The Political Ecology of an Emerging Environmental Health Concern." *Human Organization* 72, no. 3 (Summer 2013): 121–31.
- Littletree, Sandra, Miranda Belarde-Lewis, and Marisa Duarte. "Centering Relationality: A Conceptual Model to Advance Indigenous Knowledge Organization Practices." *Knowledge Organization* 47, no. 5 (2020): 410–26. <https://doi.org/10.5771/0943-7444-2020-5-410>.
- Liu, Shu, and Linda M. Meyer. "Carnations and the Floriculture Industry: Documenting the Cultivation and Marketing of Flowers in Colorado." *Journal of Archival Organization* 6, no. 1–2 (2008): 6–23. <https://doi.org/10.1080/15332740802234672>.
- Llewellyn, Megan E., and Sarah A. Buchanan. "Will the Last Archivist in Seattle Please Turn Out the Lights: Value and the National Archives." *Journal of Western Archives* 11, no. 1 (2020): Article 7. <https://doi.org/10.26077/af9d-9587>.
- Loa, Berlin, and Pamela Nett Kruger. "Community of Practice at the California State University Special Collections and University Archives." *Journal of Western Archives* 12, no. 1: Western Archivists Meeting special issue (2021): Article 1.
- Loddo, Marzia, Ilaria Rosetti, Henry McGhie, and José Luiz Pedersoli, Jr. "Empowering Collections-Based Organizations to Participate in Agenda 2030: The 'Our Collections Matter Toolkit.'" *Sustainability* 13 (2021): 13964. <https://doi.org/10.3390/su132413964>.
- Loewen, Candace. "From Human Neglect to Planetary Survival: New Approaches to the Appraisal of Environmental Records." *Archivaria* 33 (Winter /92 1991): 87–103.
- Lora-Wainwright, Anna, and Ajiang Chen. "China's Cancer Villages: Contested Evidence and the Politics of Pollution." In *A Companion to the Anthropology of Environmental Health*, edited by Merrill Singer, 396–416. Chichester, UK: Wiley Blackwell, 2016.

- Lord, Jr., Jerry Joseph. "The Charging of the Flood: A Cultural Analysis of the Impact and Recovery from Hurricane Ike in Galveston, Texas." PhD, The University of Texas at Austin, 2011. <http://hdl.handle.net/2152/14780>.
- Lough, Janice M. "Climate Records from Corals." *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 3 (June 2010): 318–31. <https://doi.org/10.1002/wcc.39>.
- Lowe, Carli V. "Partnering Preservation with Sustainability." *The American Archivist* 83, no. 1 (Spring/Summer 2020): 144–64. <https://doi.org/10.17723/0360-9081-83.1.144>.
- Lowenthal, David. "Stewarding the Future." *CRM Journal*, Summer 2005, 20–39.
- Lunde, Diane B., and Patricia A. Smith. "Disaster and Security: Colorado State Style." *Library & Archival Security* 22, no. 2 (2009): 99–114. <https://doi.org/10.1080/01960070902869766>.
- Lundgren, Britta. "Health Politics, Solidarity and Social Justice: An Ethnography of Enunciatory Communities during and after the H1N1 Pandemic in Sweden." *Ethnologia Europaea* 47, no. 2 (2017): 22–39.
- Lundquist, Eric G. *Salvage of Water Damaged Books, Documents, Micrographic and Magnetic Media*. San Francisco, CA: Document Reprocessors of San Francisco, 1986.
- Lupkin, Joshua, Sally Krash, and Eric Wedig. "Recovering Wet Materials: Disaster Plans and Recovery Workflows." In *The Importance of Being Earnest: Charleston Conference Proceedings, 2014*, edited by Beth R. Bernhardt, Leah H. Hinds, and Katina P. Strauch, 433–41. West Lafayette, IN: Purdue University Press, 2015. <https://doi.org/10.5703/1288284315601>.
- Luyk, Sean, and Colette Leung. "Oil Shows, Rodeos, and UFOs: A Canadian Prairie Sheet Music Collection." *Fontes Artis Musicae* 63, no. 1 (March 2016): 3–20.
- Luyt, Brendan. "Reading the Minor Forest Products Bulletins of the Philippine Bureau of Forestry: A Case Study of the Role of Reference Works in the American Empire of the Early Twentieth Century." *Information & Culture* 53, no. 1 (2018): 43–66. <https://doi.org/10.7560/IC53103>.
- Lyman, Peter. "Invention, the Mother of Necessity: Archival Research in 2020." *The American Archivist* 57, no. 1: Special Issue: 2020 Vision (Winter 1994): 114–25. <https://doi.org/10.17723/aarc.57.1.q3661066h0g71v72>.
- Macalister, Fiona. "Preparing for the Future: Mitigating Disasters and Building Resilience in the Cultural Heritage Sector." *Journal of the Institute of Conservation* 38, no. 2 (2015): 115–29. <https://doi.org/10.1080/19455224.2015.1068201>.
- Maćzyńska, Magdalena. "Welcome to the Post-Anthropos: Urban Space and Climate Change in Nathaniel Rich's *Odds Against Tomorrow*, Lev Rosen's *Depth*, and Kim Stanley Robinson's *New York 2140*." *Journal of Modern Literature* 43, no. 2 (Winter 2020): 165–81. <https://doi.org/10.2979/jmodelite.43.2.10>.
- Maekawa, Shin. "Case Studies of Alternative Climate Management for Hot-Humid and Marine Climates." Hyattsville, MD, 2011. <https://www.archives.gov/preservation/conferences/2011/presentations/maekawa.pdf>.
- Magier, Aruna. "Water, Land, and Forests: Documenting India's Environmental Activism." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-i002>.
- Maher, William J. "Ensuring Continuity and Preservation Through Archival Service Agreements." *Archival Issues* 19, no. 1 (1994): 5–18.
- Maldonado, María del Carmen. Interview: Conservatorio de Música de Puerto Rico. Interview by Carlos R. González-Rovira, May 2019. <https://scalar.usc.edu/works/prlamrecovery/interviewconservatorio>.

- Malek, Claire. "Bowline on a Bight: Doing Right by the Records of Lilian Bland." *Archivaria* 94 (Fall/Winter 2022): 258–83.
- Manson, Emily. "Rescuing Historical Data for Climate Science." *Active History* (blog), March 2, 2022. <https://activehistory.ca/2022/03/rescuing-historical-data-for-climate-science/>.
- Maracle, Lee. *Memory Serves: Oratories*. Edited by Smaro Kamboureli. Edmonton, AB: NeWest Press, 2015.
- Mariana, Anna. "Invigorating the Archive, Creating Discourse: The Importance of the Archive for Social Movements." In *Arsipelago! Archival Work & Archiving Art & Culture in Indonesia*, edited by Farah Wardani and Yoshi Fajar Kresno Murti, 74–91. Yogyakarta, Indonesia: Indonesian Visual Art Archive (IVAA), 2014.
- Maricevic, Maja. "Our Role in Building a Brighter Climate Future." *Knowledge Matters* (blog), November 15, 2022. <https://blogs.bl.uk/living-knowledge/2022/11/our-role-in-building-a-brighter-climate-future-.html>.
- Marino, Carly, Brianne Hagen, and Morgan Baker. "Community, Connections, and Conservation: The Ecological Sustainability Archive at Cal Poly Humboldt." Washington, DC, 2023. [https://d1keuthy5s86c8.cloudfront.net/static/ems/upload/files/1691158018\\_Marino\\_Poster.pdf](https://d1keuthy5s86c8.cloudfront.net/static/ems/upload/files/1691158018_Marino_Poster.pdf)
- Marintan, Mega Alif, Febriyanto, and Tamara Adriani Salim. "The Greatness of Clove : Challenges in Preserving Historic Newsprint Collection in Monumen Pers Nasional Solo, Indonesia." Kuala Lumpur, Malaysia: International Federation of Library Associations and Institutions, 2018. <https://library.ifla.org/id/eprint/2280>.
- Markley, Robert. *Kim Stanley Robinson*. Modern Masters of Science Fiction. Urbana, IL: University of Illinois Press, 2019.
- Marsh, Diana E., Selena St. Andre, Travis Wagner, and Joshua A. Bell. "Attitudes and Uses of Archival Materials among Science-Based Anthropologists." *Archival Science*, 2023. <https://doi.org/10.1007/s10502-023-09411-z>.
- Martin, Alexis, Charlotte Chazeau, Nicolas Gasco, Guy Duhamel, and Patrice Pruvost. "Data Curation, Fisheries and Ecosystem-Based Management: The Case Study of the Pecheker Database." *International Journal of Digital Curation* 16, no. 1 (2021). <https://doi.org/10.2218/ijdc.v16i1.674>.
- Martinez-Alier, Joan. *The Environmentalism of the Poor: A Study of Ecological Conflicts and Valuation*. Cheltenham, UK: Edward Elgar, 2002.
- Martínez-Falquina, Silvia. "Louise Erdrich's *Future Home of the Living God*: Uncertainty, Proleptic Mourning and Relationality in Native Dystopia." *ATLANTIS: Journal of the Spanish Association of Anglo-American Studies* 41, no. 2 (December 2019): 161–78. <https://doi.org/10.28914/Atlantis-2019-41.2.08>.
- Masilela, L., and D. Nel-Sanders. "Data and Information Security Governance: A Prerequisite for Improved Protection of Public Sector Data and Information Practices." *Administratio Publica* 31, no. 2 (June 2023): 183–205.
- Mason, Ingrid. "Virtual Preservation: How Has Digital Culture Influenced Our Ideas about Permanence? Changing Practice in a National Legal Deposit Library." *Library Trends* 56, no. 1 (Summer 2007): 198–215. <https://doi.org/10.1353/lib.2007.0055>.
- Mathews, Andrew S. "Ghostly Forms and Forest Histories." In *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, edited by Anna Lowenhaupt Tsing,

- Heather Anne Swanson, Elaine Gan, and Nils Bubandt, G145–56. Minneapolis, MN: University of Minnesota Press, 2017.
- Mattern, Shannon. “The Big Data of Ice, Rocks, Soils, and Sediments.” *Places Journal*, November 2017. <https://doi.org/10.22269/171107>.
- Matthews, Graham. “Disaster Management in the Cultural Heritage Sector: A Perspective of International Activity from the United Kingdom: Lessons and Messages.” Durban, South Africa: International Federation of Library Associations and Institutions, 2007. <https://archive.ifla.org/IV/ifla73/papers/140-Matthews-en.pdf>.
- Matthews, Graham, Yvonne Smith, and Gemma Knowles. “The Disaster Control Plan: Where Is It At?” *Library & Archival Security* 19, no. 2 (2004): 3–23. [https://doi.org/10.1300/J114v19n02\\_02](https://doi.org/10.1300/J114v19n02_02).
- Mattock, Lindsay Kistler, and Aiden M. Bettine. “Situating Community Archives Along the Continuum of Community-Engaged Archival Praxis: Autonomy, Independence, and the Archival Impulse.” *Archival Issues* 42, no. 1 (2023): 47–70. <https://doi.org/10.31274/archivalissues.16294>.
- Maurer, E. P., L. Brekke, T. Pruitt, B. Thrasher, J. Long, P. Duffy, M. Dettinger, D. Cayan, and J. Arnold. “An Enhanced Archive Facilitating Climate Impacts and Adaptation Analysis.” *Bulletin of the American Meteorological Society* 95, no. 7 (2014): 1011–20.
- Mazurczyk, Tara, Nathan Piekelek, Eira Tansey, and Ben Goldman. “American Archives and Climate Change: Risks and Adaptation.” *Climate Risk Management* 20 (2018): 111–25. <https://doi.org/10.1016/j.crm.2018.03.005>.
- Mazuzan, George T. “The Challenge of Nuclear Power Development Records.” *The American Archivist* 44, no. 3 (Summer 1981): 229–35. <https://doi.org/10.17723/aarc.44.3.p8v433065512r373>.
- McAdam, Jane, ed. *Climate Change and Displacement: Multidisciplinary Perspectives*. Portland, OR: Hart Publishing, 2010.
- McAlevey, Jane. *No Shortcuts: Organizing for Power in the New Gilded Age*. New York: Oxford University Press, 2016.
- McCann, Heidi, Chris McNeave, Julia Collins, Peter L. Pulsifer, Mark A. Parsons, Shari Gearheard, and Henry Huntington. “Archiving Local and Traditional Knowledge of the Arctic: Managing Data and Information in Partnership with Indigenous Communities and Earth Scientists.” In *Cold Regions: Pivot Points, Focal Points*, edited by Shelly Sommer and Ann Windnagel, 79–87. Boulder, CO, 2012. <https://nsidc.org/sites/default/files/documents/other/plc-24-proceedings-gd-34.pdf>.
- McCausland, Sigrid. “Voices of Opposition: Documenting Australian Protest Movements.” *Archives and Manuscripts* 29, no. 2 (November 2001): 48–63.
- McDonald, Franklyn. “Emergency Planning for Protection of Records.” In *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, edited by Hyacinth Brown, 7–10. Kingston, Jamaica: Jamaica Library Association, 1989.
- McGhie, Henry. “Action for Climate Empowerment: A Guide for Galleries, Libraries, Archives and Museums.” *Curating Tomorrow*, 2022. [http://www.curatingtomorrow.co.uk/wp-content/uploads/2022/04/action-for-climate-empowerment\\_2022.pdf](http://www.curatingtomorrow.co.uk/wp-content/uploads/2022/04/action-for-climate-empowerment_2022.pdf).
- . “Mainstreaming the Sustainable Development Goals: A Results Framework for Galleries, Libraries, Archives and Museums.” *Curating Tomorrow*, 2021. [http://www.curatingtomorrow.co.uk/wp-content/uploads/2022/03/mainstreaming-the-SDGs\\_2021.pdf](http://www.curatingtomorrow.co.uk/wp-content/uploads/2022/03/mainstreaming-the-SDGs_2021.pdf).

- McGregor, Deborah. "Indigenous Knowledge Systems in Environmental Governance in Canada." *KULA: Knowledge Creation, Dissemination, and Preservation Studies* 15, no. 1: Special Issue: Indigenous Knowledges (2021). <https://doi.org/10.18357/kula.148>.
- McGregor, Lee, and Jim Bruce. "Recovery of Flood Damaged Documents by the Queensland State Archives." *Archives and Manuscripts* 5, no. 8 (August 1974): 193–99.
- McIntyre, Julie. "Blank Pages, Brief Notes and Ethical Double-Binds: Micro Digitisation and the 'Infinite Archive.'" *Archives and Manuscripts* 44, no. 1 (2016): 2–13. <https://doi.org/10.1080/01576895.2015.1136224>.
- McKay, Simon S. "Storage of Machine-Readable Records." In *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, edited by Hyacinth Brown, 14–18. Kingston, Jamaica: Jamaica Library Association, 1989.
- McKemmish, Sue, Livia Iacovino, Eric Ketelaar, Melissa Castan, and Russell, Lynnette. "Resetting Relationships: Archives and Indigenous Human Rights in Australia." *Archives and Manuscripts* 39, no. 1 (May 2011): 107–44.
- McLoughlin, Lynette C. "Environmental History, Environmental Management and the Public Record: Will the Records Be There When You Need Them?" *Australasian Journal of Environmental Management* 6, no. 4 (1999): 207–18. <https://doi.org/10.1080/14486563.1999.10648472>.
- McLure, Merinda, Allison V. Level, Catherine L. Cranston, Beth Oehlerts, and Mike Culbertson. "Data Curation: A Study of Researcher Practices and Needs." *Portal: Libraries and the Academy* 14, no. 2 (2014): 139–64.
- McReynolds, Samuel A. "Rural Life in New England." *The American Archivist* 50, no. 4 (Fall 1987): 532–48. <https://doi.org/10.17723/aarc.50.4.547233h430199214>.
- Melton, Christopher, and Michael Melton. "Recording Change: Building a Collaborative Acoustic Ecology Archive." Washington, DC, 2023. [https://whova.com/portal/saar\\_202307/videos/4YjM3UjM4EjM/](https://whova.com/portal/saar_202307/videos/4YjM3UjM4EjM/).
- Mertens, Mahlu, and Stef Craps. "Contemporary Fiction vs. the Challenge of Imagining the Timescale of Climate Change." *Studies in the Novel* 50, no. 1 (2018): 134–53. <https://doi.org/10.1353/sdn.2018.0007>.
- Meyer, Rebecca, Shannon Struble, and Phyllis Catsikis. "Sustainability: A Review." In *Preserving Our Heritage: Perspectives From Antiquity to the Digital Age*, edited by Michèle Valerie Cloonan, 637–56. Chicago, IL: Neal-Schuman, 2015.
- Michener, William, Todd Vision, Patricia Cruse, Dave Vieglais, John Kunze, and Greg Janée. "DataONE: Data Observation Network for Earth — Preserving Data and Enabling Innovation in the Biological and Environmental Sciences." *D-Lib Magazine* 17, no. 1/2 (February 2011). <https://doi.org/10.1045/january2011-michener>.
- Millar, Laura. "On the Crest of a Wave: Transforming the Archival Future." *Archives and Manuscripts* 45, no. 2 (2017): 59–76. <https://doi.org/10.1080/01576895.2017.1328696>.
- Miller, Michael L. "Disc Players, the Records Manager/Archivist, and the Development of Optical Imaging Applications." *The American Archivist* 58, no. 2 (Spring 1995): 170–80. <https://doi.org/10.17723/aarc.58.2.d30p0068350073u1>.
- Milner, Andrew, and J. R. Burgmann. *Science Fiction and Climate Change: A Sociological Approach*. Liverpool Science Fiction Texts and Studies 63. Liverpool: Liverpool University Press, 2020.
- Mishler, Craig, and Kenneth Frank. "Shriniinlii ('Fix It'): The Grease Mechanics of Translating Gwich'in." In *Indigenous Languages and the Promise of Archives*, edited by Adriana Link,

- Abigail Shelton, and Patrick Spero, 461–77. Lincoln, NE: University of Nebraska Press, 2021.
- Missingham, Roxanne, and Janet Fletcher. “Dark Clouds and Silver Linings: An Epistemological Lens on Disaster Recovery.” *Journal of the Australian Library and Information Association* 69, no. 2 (June 2020): 246–61. <https://doi.org/10.1080/24750158.2020.1730067>.
- Mitcham, Jenny. “DPC RAM (Version 2) - What Has Changed and Why?” *Digital Preservation Coalition* (blog), November 25, 2021. <https://www.dpconline.org/blog/dpc-ram-version-2-what-has-changed-and-why>.
- . “Enacting Environmentally Sustainable Preservation: Some Thoughts.” *Digital Preservation Coalition* (blog), November 22, 2021. <https://www.dpconline.org/blog/enacting-environmentally-sustainable-preservation-some-thoughts>.
- Mitchell, Audra, and Aadita Chaudhury. “Worlding beyond ‘the’ ‘End’ of ‘the World’: White Apocalyptic Visions and BIPOC Futurisms.” *International Relations* 34, no. 3 (September 2020): 309–32. <https://doi.org/10.1177/0047117820948936>.
- Moberg, Laurie Anne Fedie. “Fluid Landscapes: Materializing the Future on Thailand’s Flooded Rivers.” PhD, University of Minnesota, 2018. <https://hdl.handle.net/11299/225889>.
- Moir, Michael B. “Finding Aids and Photographs: A Case Study in the Use of Analog Optical Disc Technology to Improve Access to Historical Images.” *Archivaria* 36: Electronic Records (Autumn 1993): 74–86.
- Monserrate, Steven Gonzalez. “After the Cloud: Rethinking Data Ecologies through Anthropology & Speculative Fiction.” Presented at the iPres 2022 Glasgow 18th International Conference on Digital Preservation, Glasgow, Scotland, September 15, 2022. <https://www.youtube.com/watch?v=pFCqgmLgqzg>.
- Monteith, Basil. “Insurance As It Relates to the Protection of Documents and Vital Data.” In *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, edited by Hyacinth Brown, 26–27. Kingston, Jamaica: Jamaica Library Association, 1989.
- Montenegro, Maria. “Re-Placing Evidence: Locating Archival Displacements in the US Federal Acknowledgment Process.” In *Disputed Archival Heritage*, edited by James Lowry, 87–119. London: Routledge, 2023.
- Montoya, Robert. “Documenting Biodiversity: Information, Libraries, and Professional Ethics.” New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-i007>.
- Moore, Erik A. “Birds of a Feather: Some Fundamentals on the Archives-Ecology Paradigm.” *Archivaria* 63: Special Section on Archives and Culture (Spring 2007): 103–19.
- Moore, Ramey Arlen. “Our Land Is Not Just Soil: Knowing, Feeling, and Doing Environmental Activism in the Arkansas Ozarks.” PhD, University of Arkansas, 2017. <https://scholarworks.uark.edu/etd/2560/>.
- Moritz, Sarah Carmen. “Cú’lḥkan Sqwéqwe’l (‘I Am Going to Tell a Story’): Revitalizing Stories to Strengthen Fish, Water, and the Upper St’át’imc Salish Language.” In *Indigenous Languages and the Promise of Archives*, edited by Adriana Link, Abigail Shelton, and Patrick Spero, 309–48. Lincoln, NE: University of Nebraska Press, 2021.
- Morris, Steve, James Tuttle, and Jefferson Essic. “A Partnership Framework for Geospatial Data Preservation in North Carolina.” *Library Trends* 57, no. 3 (Winter 2009): 516–40. <https://doi.org/10.1353/lib.0.0050>.
- Morrissey, Wayne A. “Data Management and Global Change Research: Technology and Infrastructure.” *Government Information Quarterly* 10, no. 2 (1993): 159–201. [https://doi.org/10.1016/0740-624X\(93\)90050-A](https://doi.org/10.1016/0740-624X(93)90050-A).

- Morrone, Melissa, ed. *Human Operators: A Critical Oral History on Technology in Libraries and Archives*. Sacramento, CA: Library Juice Press, 2018.
- Morse-Harding, Chloe, and Colleen Hitchcock. "A Review of Opportunities for Science Research and Place-Based Science Storytelling in the Undergraduate Classroom Utilizing Archival Material." Brooklyn, NY, 2018. <https://doi.org/10.17605/OSF.IO/2CX6T>.
- Muir, Adrienne, and Sarah Shenton. "If the Worst Happens: The Use and Effectiveness of Disaster Plans in Libraries and Archives." *Library Management* 23, no. 3 (May 2002): 115–23. <https://doi.org/10.1108/01435120210697216>.
- Mundy, Karen. "The *Binti* Series and *The Marrow Thieves*." *Comparative Education Review* 64, no. 1 (February 2020): 139–42.
- Murray, Toby. "Flood Recovery in Tulsa." *Illinois Libraries* 67, no. 8 (October 1985): 717–19.
- Murti, Yoshi Fajar Kresno. "Introduction: Recycling! Archival Work and Archiving Art and Culture in Indonesia." In *Arsipelago! Archival Work & Archiving Art & Culture in Indonesia*, edited by Farah Wardani and Yoshi Fajar Kresno Murti, iv–xv. Yogyakarta, Indonesia: Indonesian Visual Art Archive (IVAA), 2014.
- Myers, Bernadette, and Melinda Moe. "Greening the Archive: The Social Climate of Cotton Manufacturing in the 'Samuel Oldknow Papers, 1782-1924.'" *Journal of Contemporary Archival Studies* 8 (2021): Article 10.
- Nading, Alex, and Lucy Lowe. "Social Justice as Epidemic Control: Two Latin American Case Studies." *Medical Anthropology* 37, no. 6: Technologies and Materialities of Epidemic Control (2018): 458–71. <https://doi.org/10.1080/01459740.2018.1485021>.
- Nading, Alex M. "Living in a Toxic World." *Annual Review of Anthropology* 49 (October 2020): 209–24. <https://dx.doi.org/10.1146/annurev-anthro-010220-074557>.
- . "Local Biologies, Leaky Things, and the Chemical Infrastructure of Global Health." *Medical Anthropology* 36, no. 2 (2017): 141–56. <https://doi.org/10.1080/01459740.2016.1186672>.
- Najar, Jaffer Kabir, and Zahid Ashraf Wani. "A Study of Disaster Preparedness of Archives & Museum in Seismic Zone - v, Flood Prone and Conflict Ridden Kashmir." *Collection and Curation* 40, no. 2 (April 2021): 33–41. <https://doi.org/10.1108/CC-02-2020-0003>.
- Namhila, Ellen Ndeshi. "Content and Use of Colonial Archives: An under-Researched Issue." *Archival Science* 16, no. 2 (June 2016): 111–23. <https://doi.org/10.1007/s10502-014-9234-0>.
- Nash, Jackson Jesse. "'I Am Not Returning Home': A Transgender Reading of Jeff VanderMeer's *Annihilation*." *Critique: Studies in Contemporary Fiction* 63, no. 2 (2022): 247–56. <https://doi.org/10.1080/00111619.2021.1961672>.
- National Health and Medical Research Council. "Ethical Conduct in Research with Aboriginal and Torres Strait Islander Peoples and Communities: Guidelines for Researchers and Stakeholders," August 2018. <https://www.nhmrc.gov.au/guidelines-publications/ind2>.
- Natural Resource Conservation Service. "US Watersheds (HUC 8)." Accessed June 11, 2023. <https://nrcs.maps.arcgis.com/apps/instant/basic/index.html?appid=c5841399969a4f649fd0f806e5bc4748>.
- Neal, James G. "The Integrity of Research Is at Risk: Capturing and Preserving Web Sites and Web Documents and the Implications for Resource Sharing." Lyon, France: International Federation of Library Associations and Institutions, 2014. <https://library.ifla.org/id/eprint/907>.
- Netshakhuma, Nkholezeni Sidney. "Analysis of the Alliance of Archives, Libraries, and Museums of South Africa National Parks: Kruger National Park." *IFLA Journal* 47, no. 1 (March 2021): 65–77. <https://doi.org/10.1177/0340035220912514>.

- . “Assessment Appraisal, Disposal and Transfer of Neglected Rangers’ Diaries Created from 1926 to 1930: Case of the Kruger National Parks of South Africa.” *Collection and Curation* 40, no. 3: Special Issue: Grey Literature (2021): 83–92. <https://doi.org/10.1108/CC-09-2019-0029>.
- . “The Impact of Climate Change on the Mpumalanga Provincial Archives and Records Management Activities.” *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 269–83. <https://doi.org/10.1108/RMJ-09-2020-0031>.
- . “The Link Between Climate Change and Digitization of Archives in South Africa.” In *Handbook of Research on Sustainable Development Goals, Climate Change, and Digitalization*, 537–52. Hershey, PA: Engineering Science Reference, 2022.
- Netshakhuma, Sidney, and Itumeleng Khadambi. “Assess Increased Flooding on the Archiving System of the South African National Parks, South Africa.” *Comma* 2021, no. 2 (2023): 363–70. <https://doi.org/10.3828/coma.2021.32>.
- Newnham, Mick. “Adapt/Survive: Outside the Box Energy & Conservation Policies, Practices and Methods.” Pittsburgh, PA, 2016.
- Ngulube, Patrick. “Disaster and Security Management in Public Archival Institutions in ESARBICA Region.” *African Journal of Library, Archives and Information Science* 15, no. 1 (April 2005): 15–23.
- Ngulube, Patrick, Cynthia Kefilwe Modisane, and Nampombe Mnkeni-Saurombe. “Disaster Preparedness and the Strategic Management of Public Records in South Africa: Guarding against Collective Cultural Amnesia.” *Information Development* 27, no. 4 (November 2011): 239–50. <https://doi.org/10.1177/0266666911417641>.
- Nieusma, Dean. “Alternative Design Scholarship: Working toward Appropriate Design.” *Design Issues* 20, no. 3: STS and the Social Shaping of Design (Summer 2004): 13–24.
- Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press, 2011.
- Norton-Wisla, Lotus. “Cycles of Learning and Growth: Developing the Tribal Digital Stewardship Cohort Program Guided by Indigenous Perspectives.” *Journal of Western Archives* 13, no. 1 (2022): Article 15.
- Nost, Eric, Gretchen Gehrke, Grace Poudrier, Aaron Lemelin, Marcy Beck, and Sara Wylie. “Visualizing Changes to US Federal Environmental Agency Websites, 2016–2020.” *PLoS ONE* 16, no. 2 (2021): e0246450. <https://doi.org/10.1371/journal.pone.0246450>.
- Novak, Joy R. “Examining Activism in Practice.” In *Research in the Archival Multiverse*, edited by Anne J. Gilliland, Sue McKemmish, and Andrew J. Lau, 968–97. Clayton, Victoria: Monash University Publishing, 2017.
- Nowviskie, Bethany. “Change Us, Too.” Baltimore, MD, 2019. <http://nowviskie.org/2019/change-us-too/>.
- . “Digital Humanities in the Anthropocene.” *Digital Scholarship in the Humanities* 30, no. Supplement 1 (2015): i4–15. <https://doi.org/10.1093/llc/fqv015>.
- . “Reconstitute the World: Machine-Reading Archives of Mass Extinction.” *Bethanie Nowviskie* (blog), June 12, 2018. <http://nowviskie.org/2018/reconstitute-the-world/>.
- . “Speculative Collections and the Emancipatory Library.” Boston, MA, 2016. <http://nowviskie.org/2016/speculative-collections/>.

- Nsibirwa, Zawedde. “Building the South African Nation through Legal Deposit in Times of Rapid Climate Change: The Structural Design of the Msunduzi Municipal Library.” *Mousaion* 34, no. 3 (2016): 104–22.
- Nsibirwa, Zawedde, Ruth Hoskins, and Christine Stillwell. “The Effects of Climate Change in Preserving the Past and Enhancing the Future of Legal Deposit in South Africa.” *Mousaion* 31, no. 2 (2013): 115–34.
- Ntanos, Kostas, and Sarah VanSnick. “Understanding the Environment in an Archive Store.” *International Preservation News*, December 2011.
- Nuclear Energy Agency. “Preservation of Records, Knowledge and Memory (RK&M) Across Generations: Compiling a Set of Essential Records for a Radioactive Waste Repository.” Organisation for Economic Co-operation and Development, 2019. [https://www.oecd-neo.org/jcms/pl\\_15090](https://www.oecd-neo.org/jcms/pl_15090).
- Nzinga, Fari. “Exit the Matrix, Enter the System: Capitalizing on Black Culture to Create and Sustain Community Institutions in Post-Katrina New Orleans.” PhD, Duke University, 2013. <https://hdl.handle.net/10161/8229>.
- Obach, Brian. “Political Opportunity and Social Movement Coalitions: The Role of Policy Segmentation and Nonprofit Tax Law.” In *Strategic Alliances: Coalition Building and Social Movements*, edited by Nella Van Dyke and Holly J. McCammon, 197–218. Minneapolis, MN: University of Minnesota Press, 2010.
- Ogburn, Joyce L. “The Imperative for Data Curation.” *Portal: Libraries and the Academy* 10, no. 2 (April 2010): 241–46. <https://doi.org/10.1353/pla.0.0100>.
- O’Gorman, Emily, James Beattie, and Matthew Henry. “Histories of Climate, Science, and Colonization in Australia and New Zealand, 1800–1945.” *Wiley Interdisciplinary Reviews: Climate Change* 7, no. 6 (December 2016): 893–909. <https://doi.org/10.1002/wcc.426>.
- Oliver, Amanda. “The Impact of Climate Change on Canadian Archives.” *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 284–302. <https://doi.org/10.1108/RMJ-10-2020-0035>.
- Olmo, María José del. “Matrix: A Double Functional Business Classification Scheme.” *Records Management Journal* 16, no. 3 (2006): 159–68. <https://doi.org/10.1108/09565690610713200>.
- Olshausen, Mattias. “The Archival Challenges and Choices of a Small Non-Profit Organization Attempting to Preserve Its Unique Past.” *Journal of Western Archives* 10, no. 2 (2019): Article 6. <https://doi.org/10.26077/2c4b-b730>.
- Olson, Hope A. *The Power to Name: Locating the Limits of Subject Representation in Libraries*. Dordrecht, Netherlands: Springer, 2011.
- Onyeji, Elizabeth, and Christian Onyeji. “After the Collection, What Next? Challenges of Preservation of Folk Music Recordings in an Unstable Climatic Environment in Nigeria (Library of Folk Music of Nigeria Project in Focus.” *Fontes Artis Musicae* 70, no. 2 (June 2023): 127–41. <https://doi.org/10.1353/fam.2023.a901181>.
- Onyeneke, Cajetan Okechukwu. “Impact of Disaster on Access to Records of National Archives of South East, Nigeria.” *Collection Building* 36, no. 2 (April 2017): 63–68. <https://doi.org/10.1108/CB-12-2016-0033>.
- Onyima, Blessing Nonye. “S2 E7: Heritage Has a History.” Interview by Nicole Kang Ferraiolo. Podcast, 27:51, March 31, 2021. Material Memory. <https://material-memory.clir.org/s2-e7-heritage-has-a-history/>.

- Orr, Scott Allan, Jenny Richards, and Sandra Fatorić. "Climate Change and Cultural Heritage: A Systematic Literature Review (2016–2020)." *The Historic Environment: Policy & Practice* 12, no. 3–4 (2021): 434–77. <https://doi.org/10.1080/17567505.2021.1957264>.
- Ortiz, Roberto J. "Financialization, Climate Change, and the Future of the Capitalist World-Ecology: On Kim Stanley Robinson's *New York 2140*." *Soundings: An Interdisciplinary Journal* 103, no. 2 (2020): 264–85.
- O'Toole, James M. "On the Idea of Permanence." *The American Archivist* 52, no. 1 (Winter 1989): 10–25. <https://doi.org/10.17723/aarc.52.1.3x85283576r43387>.
- Padfield, Tim, and Poul Klensz Larsen. "Low Energy Air-Conditioning of Archives." *Journal of the Society of Archivists* 27, no. 2 (February 2007): 213–26. <https://doi.org/10.1080/00379810601101293>.
- Parak, Gisela. *Photographs of Environmental Phenomena: Scientific Images in the Wake of Environmental Awareness, USA 1860s-1970s*. Bielefeld, Germany: transcript, 2015.
- Pardoe, Joanna, Katharine Vincent, and Declan Conway. "How Do Staff Motivation and Workplace Environment Affect Capacity of Governments to Adapt to Climate Change in Developing Countries?" *Environmental Science and Policy* 90 (December 2018): 46–53. <https://doi.org/10.1016/j.envsci.2018.09.020>.
- Parikka, Jussi. "Planetary Goodbyes: Post-History and Future Memories of an Ecological Past." In *Memory in Motion: Archives, Technology and the Social*, edited by Ina Blom, Trond Lundemo, and Eivind Røssaak, 129–52. Amsterdam: Amsterdam University Press, 2017. <https://doi.org/10.2307/j.ctt1jd94f0.9>.
- Park, Eun G., Gordon Burr, Victoria Slonosky, Renee Sieber, and Podolsky Lori. "Data Rescue Archive Weather (DRAW): Preserving the Complexity of Historical Climate Data." *Journal of Documentation* 74, no. 4 (2018): 763–80. <https://doi.org/10.1108/JD-10-2017-0150>.
- Parsons, Mark A., Øystein Godøy, Ellsworth LeDrew, Taco F. de Bruin, Bruno Danis, Scott Tomlinson, and David Carlson. "A Conceptual Framework for Managing Very Diverse Data for Complex, Interdisciplinary Science." *Journal of Information Science* 37, no. 6 (December 2011): 555–69. <https://doi.org/10.1177/0165551511412705>.
- Parton, Graham A., Steve Donegan, Stephen Pascoe, Ag Stephens, Spiros Ventouras, and Bryan N. Lawrence. "MOLES3: Implementing an ISO Standards Driven Data Catalogue." *International Journal of Digital Curation* 10, no. 1 (2015): 249–59. <https://doi.org/10.2218/ijdc.v10i1.365>.
- Paschalidou, Evangelia. "Environmental Sustainability in Digital Preservation of Cultural Heritage: Advancing a Sufficiency Approach for Cultural Heritage Organisations; A Case Study of the Finnish Heritage Agency." Master of Science, Lund University, 2021. <http://lup.lub.lu.se/student-papers/record/9062811>.
- Pascoe, M. W. "Impact of Environmental Pollution on the Preservation of Archives and Records: A RAMP Study." Paris: United Nations, Educational, Scientific, and Cultural Organization, 1988.
- Pattillo, Rebecca, Sarah Dorpinghaus, Cory Lampert, and Rachel Gattermeyer. "Digital Double Bind: Exploring the Impact of More Product, Less Process (MPLP) on Digital Collections." Tampa, FL, 2019.
- Pavelka, Karen L., and Snowden Becker. "Introduction." edited by Melissa Tedone. Austin, TX, 2007. <https://web.archive.org/web/20100620112941/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings.html>.

- Pearlstein, Ellen. "Teaching Sustainable Collection Care." *Journal of the American Institute for Conservation* 56, no. 2: Collection Care (2017): 113–25.  
<https://doi.org/10.1080/01971360.2016.1217726>.
- Pei, Lucy, Benedict Salazar Olgado, and Roderic Crooks. "Narrativity, Audience, Legitimacy: Data Practices of Community Organizers." In *CHI EA '22: Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems*, Article No.: 328. New Orleans, LA: Association for Computing Machinery, 2022. <https://doi.org/10.1145/3491101.3519673>.
- Pelton, Colin, and Mark Thorley. "The Fit Between the UK Environmental Information Regulations and the Freedom of Information Act." *International Journal of Digital Curation* 1, no. 3 (August 2008): 158–66. <https://doi.org/10.2218/ijdc.v3i1.51>.
- Pendergrass, Keith. "Embedding Sustainability into Systems and Tools: A Brief Case Study." *Digital Preservation Coalition* (blog), November 10, 2021.  
<https://www.dpconline.org/blog/pendergrass-embedding-sustainability>.
- . "Integrating Environmental Sustainability into Policies and Workflows." *bloggERS!* (blog), July 28, 2020. <https://saaers.wordpress.com/2020/07/28/integrating-environmental-sustainability-into-policies-and-workflows/>.
- Pendergrass, Keith, Walker Sampson, Tim Walsh, and Laura Alagna. "Toward Environmentally Sustainable Digital Preservation." *The American Archivist* 82, no. 1 (Spring/Summer 2019): 165–206. <https://doi.org/10.17723/0360-9081-82.1.165>.
- Peterken, G. F. "The Use of Records in Woodland Ecology." *Archives* 14, no. 62 (Autumn 1979): 81–87.
- Peterson, Trudy Huskamp. "The Universal Declaration of Human Rights: An Archival Commentary." *Comma* 2020, no. 1–2 (August 2021): 33–86.  
<https://doi.org/10.3828/comma.2020.4>.
- Petrov, Valentin P., Elena I. Makarova, and Tatiana A. Fridman. "Significance of Academic Science in Industrial Development of the Barents Region: Historical Reconstruction in the Special Edition of the Archival Documents of the First Polar Conference of 1932 in Khibinogorsk." In *Cool Libraries in a Melting World*, edited by Marcel Brannemann and Daria O. Carle, 56–63. Bremerhaven, Germany: Helmholtz Gemeinschaft, 2010.  
<https://doi.org/10.7939/R36M33K4V>.
- Phoenix, Sandra, and Monika Rhue. "S3 E1: Our Ancestors' Wildest Dreams." Interview by Sharon M. Burney. Podcast, 31:44, March 21, 2022. Material Memory. <https://material-memory.clir.org/s3-e1-our-ancestors-wildest-dreams/>.
- Pinnick, Jaana. "Building Resilience at the National Geoscience Data Center: Enhancing Digital Data Continuity Through Research Data Management Training." In *Proceedings of the 16th International Conference on Digital Preservation*, edited by Marcel Ras, Barbara Sierman, and Angela Puggioni, 360–64. Amsterdam, 2019. <https://doi.org/10.17605/OSF.IO/CR2AH>.
- . "Exploring Digital Preservation Requirements: A Case Study from the National Geoscience Data Centre (NGDC)." *Records Management Journal* 27, no. 2 (2017): 175–91.  
<https://doi.org/10.1108/RMJ-04-2017-0009>.
- Pitblado, Lisbeth J. "Developing an Acquisition Strategy for the Records of Environmental Non-Government Organizations." Master of Archival Studies, University of British Columbia, 1993. <http://hdl.handle.net/2429/1656>.
- Platt, Vanessa Louise. "Restor(y)ng Community Identity through the Archive of Ken Saro-Wiwa." *Archives and Records* 39, no. 2 (2018): 139–57.  
<https://doi.org/10.1080/23257962.2017.1363032>.

- Podany, Jerry. "Facing Change: Basing Heritage Conservation on Broader Stewardship Principles." Hyattsville, MD, 2011.  
<https://www.archives.gov/preservation/conferences/2011/presentations/podany.pdf>.
- Poirier, Lindsay. "Knowledge Representation in Scruffy Worlds: An Ethnography of Semiotic Infrastructure Design Work." PhD, Rensselaer Polytechnic Institute, 2018.  
<https://hdl.handle.net/20.500.13015/2171>.
- Poole, Alex H. "How Has Your Science Data Grown? Digital Curation and the Human Factor: A Critical Literature Review." *Archival Science* 15 (2015): 101–39.  
<https://doi.org/10.1007/s10502-014-9236-y>.
- Popham, Michael, and Jean-Noël Mitcham. "From Ray Cats to DPC RAM: How Best to Preserve a Digital Memory of the Nuclear Decommissioning Process." In *Proceedings of the 18th International Conference on Digital Preservation 2022*, 315–18. Glasgow, Scotland: Digital Preservation Coalition, 2022. <https://doi.org/10.7207/ipres2022-proceedings>.
- Popowich, Sam. "The Onus of Explanation." *Pathfinder: A Canadian Journal for Information Science Students and Early Career Professionals* 2, no. 1: Proceedings of the 2021 Forum for Information Professionals: Knowledge as Resistance: Kooky Academic Theories in Action (April 2021): 5–26. <https://doi.org/10.29173/pathfinder46>.
- Post, Colin, and Alexandra Chassanoff. "Beyond the Workflow: Archivists' Aspirations for Digital Curation Practices." *Archival Science* 21 (2021): 413–32.  
<https://doi.org/10.1007/s10502-021-09365-0>.
- Powell, Timothy B. "The Role of Indigenous Communities in Building Digital Archives." In *Afterlives of Indigenous Archives: Essays in Honor of the Occom Circle*, edited by Ivy Schweitzer and Gordon Henry, 23–44. Hanover, NH: Dartmouth College Press, 2019.  
<https://digitalcommons.dartmouth.edu/facoa/3983>.
- Pravinchandra, Shital. "'More than Biological': Cherie Dimaline's *The Marrow Thieves* as Indigenous Counter-genetic Fiction." *Medical Humanities* 47 (2021): 135–44.  
<https://doi.org/10.1136/medhum-2020-012103>.
- Prelinger, Rick. "Collecting Strategies for the Anthropocene." New York, NY, 2017.  
<https://credo.library.umass.edu/view/full/mums1010-i002>.
- Premoli, Martín. "Global Anthropocene Fiction and the Politics of Climate Disaster." PhD, University of Pennsylvania, 2020. <https://repository.upenn.edu/handle/20.500.14332/31108>.
- Pringle, Anne. "Establishing New Worlds: The Lichens of Petersham." In *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, edited by Anna Lowenhaupt Tsing, Heather Anne Swanson, Elaine Gan, and Nils Bubandt, 615–67. Minneapolis, MN: University of Minnesota Press, 2017.
- Project ARCC. "Climate Strike Teach-Ins," September 11, 2019.  
<https://projectarcc.org/2019/09/11/climate-strike-teach-ins/>.
- project\_arcc. "ProjectARCC: Archivists Responding to Climate Change." Accessed March 9, 2021. <https://projectarcc.org/>.
- Punzalan, Ricardo L., and Michelle Caswell. "Critical Directions for Archival Approaches to Social Justice." *Library Quarterly* 86, no. 1 (January 2016): 24–42.  
<https://doi.org/10.1086/684145>.
- Punzalan, Ricardo L., and Adam Kriesberg. "Library-Mediated Collaborations: Data Curation at the National Agricultural Library." *Library Trends* 65, no. 3: Collaboration in Agricultural Librarianship and Information Work (Winter 2017): 429–77.  
<https://doi.org/10.1353/lib.2017.0010>.

- Punzalan, Ricardo L., Diana E. Marsh, and Kyla Cools. "Beyond Clicks, Likes, and Downloads: Identifying Meaningful Impacts for Digitized Ethnographic Archives." *Archivaria* 84 (Fall 2017): 61–102.
- Pye, Elizabeth, and Dean Sully. "Evolving Challenges, Developing Skills." *The Conservator* 30, no. 1 (2007): 19–37. <https://doi.org/10.1080/01410096.2007.9995221>.
- Radio, Erik. "Documents for the Nonhuman." *Journal of Critical Library and Information Studies* 3, no. 1: Libraries and Archives in the Anthropocene (2020). <https://doi.org/10.24242/jclis.v3i1.108>.
- Radio, Erik, Katie Fletcher, and Athea Merredyth. "Creating and Using a Glacier Authority Index to Document Climate Change." *Cataloging & Classification Quarterly* 58, no. 5 (May 2020): 486–504. <https://doi.org/10.1080/01639374.2020.1762144>.
- Ramdeen, Sarah. "Preservation Challenges for Geological Data at State Geological Surveys." *GeoResJ* 6 (June 2015): 213–20. <https://doi.org/10.1016/j.grj.2015.04.002>.
- Ramphal, Sir Shridath. "Sharing Memory through Globalisation." *Comma* 2006, no. 3-4: CITRA 2006 (January 2006): 1–4. <https://doi.org/10.3828/comma.2006.3-4.2>.
- Ramuglia, River. "Cli-Fi, Petroculture, and the Environmental Humanities: An Interview with Stephanie LeMenager." *Studies in the Novel* 50, no. 1 (Spring 2018): 154–64. <https://doi.org/10.1353/sdn.2018.0008>.
- Räthzel, Nora, and David Uzzell. "Trade Unions and Climate Change: The Jobs versus Environment Dilemma." *Global Environmental Change* 21 (2011): 1215–23. <https://doi.org/10.1016/j.gloenvcha.2011.07.010>.
- Ray, Katharine W. "A Motivating Climate: An Exploratory Study of the DataRescue Movement." Master of Science, University of North Carolina at Chapel Hill, 2018. <https://doi.org/10.17615/s089-rb86>.
- Rea, Amy. "Library Workers Unite: Unionization Efforts Grow Across All Sectors." *Library Journal*, February 14, 2022. <https://www.libraryjournal.com/story/Library-Workers-Unite-Unionization-Efforts-Grow-Across-All-Sectors>.
- Real, Brian, and Teague Schneider. "2020 AMIA Salary and Demographics Survey of the Field: Findings and Future Directions." Association of Moving Image Archivists, November 11, 2021. <https://amianet.org/wp-content/uploads/The-2020-AMIA-Annual-Salary-and-Demographics-Survey-of-the-Field-II.pdf>.
- "Recommendation for Archival Salaries Task Force." Society of American Archivists Council Meeting, December 3, 2019. <https://www2.archivists.org/sites/all/files/1219-IV-A-ArchSalariesTF.pdf>.
- "Records Management in the Environmental Protection Agency: A NARA Evaluation." Washington, DC: National Archives and Records Administration, February 1992. HathiTrust. <https://hdl.handle.net/2027/uiug.30112101562376>.
- Reilly, James. "Specifying Storage Environments in Libraries and Archives." edited by Melissa Tedone. Austin, TX, 2007. <https://web.archive.org/web/20101102012143/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings2008/GAGA07-reilly.pdf>.
- Relle, Blake, and Danielle Cordovez. "Dramatically Reducing An Archive's Carbon Footprint by Working with the City." *Project\_arcc* (blog), January 11, 2016. <https://projectarcc.org/2016/01/11/dramatically-reducing-an-archives-carbon-footprint-by-working-with-the-city/>.

- Requeijo, Brigitte, and Hillel Arnold. "One Step at a Time: Shrinking Our Carbon Footprint." Virtual Conference, 2023.
- Rettig, Patricia. S2 Ep10 The Water Archivist. Interview by Tom Bellinger and Greg Dewey. Podcast, 36:11, November 12, 2023. H2O Talk. <https://talkh2o.podbean.com/e/s2-ep10-the-water-archivist/>.
- Rettig, Patricia J. "An Integrative Approach to Archival Outreach: A Case Study of Becoming Part of the Constituents' Community." *Journal of Archival Organization* 5, no. 3 (2008): 31–46. <https://doi.org/10.1080/15332740802174175>.
- . "Collecting Water: An Analysis of a Multidisciplinary Special-Subject Archives." *The American Archivist* 80, no. 1 (Spring/Summer 2017): 82–102. <https://doi.org/10.17723/0360-9081.80.1.82>.
- . "Documenting Disasters: A Focus on Floods." *Journal of Western Archives* 10, no. 2 (2019): Article 2.
- . "Tracing the Source of Irrigation: An Examination of Colorado Ditch Company Collections in Archival Repositories." *Journal of Western Archives* 3, no. 1 (2012): Article 1.
- . "Water Tables: A Case Study of a Successful Archival Fund-Raising Event." *The American Archivist* 73, no. 1 (Spring/Summer 2010): 204–18. <https://doi.org/10.17723/aarc.73.1.670850x317681420>.
- Richard, Nancy, and Joan D. Krizack. "Preserving the History of Boston's Diversity." *Provenance, Journal of the Society of Georgia Archivists* 17, no. 1 (January 1999): 23–52.
- Rinn, Meg. "Impermanent Positions, Permanent Losses: How Contingent Employment Impacts Descriptive Work and Makes Us All a Little Worse Off." *Descriptive Notes* (blog), June 8, 2022. <https://saadescription.wordpress.com/2022/06/08/impermanent-positions-permanent-losses-how-contingent-employment-impacts-descriptive-work-and-makes-us-all-a-little-worse-off/>.
- Rivard, Courtney J. "Archiving Disaster: A Comparative Study of September 11, 2001 and Hurricane Katrina." PhD, University of California Santa Cruz, 2012. <https://escholarship.org/uc/item/1kt0v0q8>.
- . "Archiving Disaster and National Identity in the Digital Realm: The September 11 Digital Archive and the Hurricane Digital Memory Bank." In *Identity Technologies: Constructing the Self Online*, edited by Anna Poletti and Julie Rak, 132–43. Madison, WI: The University of Wisconsin Press, 2013.
- Rivera, Miguel Santiago. Interview: University of Puerto Rico Río Piedras Campus Library System. Interview by Ana I. Steidel, December 2018. <https://scalar.usc.edu/works/prlamrecovery/interviewuprplibrarysystem>.
- Robinson, David A. "Evaluation of the Collection, Archiving and Publication of Daily Snow Data in the United States." *Physical Geography* 10, no. 2 (1989): 120–30.
- Robinson, Georgina. "Come Hell or High Water: Climate Action by Archives, Records and Cultural Heritage Professionals in the United Kingdom." *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 314–40. <https://doi.org/10.1108/RMJ-10-2020-0036>.
- Robinson, Kim Stanley. *New York 2140*. New York: Orbit, 2017.
- Roche, Dominique G., Robert Lanfear, Sandra A. Binning, Tonya M. Haff, Lisa E. Schwanz, Kristal E. Cain, Hanna Kokko, Michael D. Jennions, and Loeske E. B. Kruuk. "Troubleshooting Public Data Archiving: Suggestions to Increase Participation." *PLoS Biology* 12, no. 1 (January 2014): e1001779. <https://doi.org/10.1371/journal.pbio.1001779>.

- Rockembach, Moisés, and Anabela Serrano. "Climate Change and Web Archives: An Ibero-American Study Based on the Portuguese and Brazilian Contexts." *Records Management Journal* 31, no. 3: Special issue: Records management in the Anthropocene: pathways and challenges presented by climate change (2021): 222–39. <https://doi.org/10.1108/RMJ-11-2020-0039>.
- Rodriguez, Evelyn Milagros. "I'm a Librarian in Puerto Rico, and This Is My Hurricane Maria Survival Story." *The Conversation* (blog), October 26, 2017. <https://theconversation.com/im-a-librarian-in-puerto-rico-and-this-is-my-hurricane-maria-survival-story-86426>.
- Rodriguez, Sandy, Ruth Tillman, Amy Wickner, Stacie Williams, and Emily Drabinski. "Collective Responsibility: Seeking Equity for Contingent Labor in Libraries, Archives, and Museums," July 30, 2019. <https://osf.io/m6gn2/>.
- Roe, Kathleen D. *Advocacy and Awareness for Archivists*. Chicago, IL: Society of American Archivists, 2019.
- . "Let's Give Them Something to Talk About." *Provenance, Journal of the Society of Georgia Archivists* 28, no. 1 (2010): 5–18.
- Rosa, Sandra. Interview: Center for Access to Information, Inter American University of Puerto Rico Bayamón Campus. Interview by Natalia M. Lucena Trujillo, April 2019. <https://scalar.usc.edu/works/prlamrecovery/interviewcaibayamon>.
- Rosanowski, Annika. "Saving the Present: Material Feminist Readings of Canadian and U.S. Post-Apocalyptic Fiction of the Twenty-First Century." PhD, University of Alberta, 2020. <https://doi.org/10.7939/r3-n7qa-kg79>.
- Rosenthal, David. "Seeds or Code?" *DSHR's Blog* (blog), November 19, 2019. <https://blog.dshr.org/2019/11/seeds-or-code.html>.
- . "Talk at TTI/Vanguard Conference." *DSHR's Blog* (blog), December 8, 2021. <https://blog.dshr.org/2021/12/talk-at-ttvanguard-conference.html>.
- . "Why Preserve E-Journals? To Preserve the Record." *DSHR's Blog* (blog), June 10, 2007. <https://blog.dshr.org/2007/06/why-preserve-e-journals-to-preserve.html>.
- Rosenthal, David S. H. "Why Is Green Preservation Hard?" Alexandria, VA, 2013. <https://blog.dshr.org/2013/07/talk-at-digital-preservation-2013.html>.
- Rougeux, Debora A. "Processing the CONSOL Energy, Inc. Mine Maps and Records Collection at the University of Pittsburgh." *Journal of Archival Organization* 9, no. 2 (2011): 118–26. <https://doi.org/10.1080/15332748.2011.602600>.
- Rowe, Rebecca J. "Looking to the Past to Plan for the Future: Using Natural History Collections as Historical Baselines." In *Stepping in the Same River Twice: Replication in Biological Research*, edited by Ayelet Shavit and Aaron M. Ellison, 64–79. New Haven, CT: Yale University Press, 2017.
- Rowoldt, Sandra. "Going Archivaly Green: Implications of Doing It Naturally in Southern African Archives and Libraries." *South African Journal of Libraries and Information Science* 66, no. 4 (1998): 141–47. <https://doi.org/10.7553/66-4-1425>.
- Rudin, Ronald. "Voices of Kouchibouguac." *Oral History Forum d'histoire Orale* 30: Talking Green: Oral History and Environmental History (2010). <http://www.oralhistoryforum.ca/index.php/ohf/article/view/390>.
- Rusnov, Cornelius J. "Pennsylvania's Rare Collections Library Design Overview (Non-Technical)." edited by Melissa Tedone. Austin, TX, 2007. <https://web.archive.org/web/20101102012143/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings2008/GAGA07-rusnov.pdf>.

- Russell, Lynnette. "Indigenous Knowledge and Archives: Accessing Hidden History and Understandings." *Australian Academic & Research Libraries* 36, no. 2 (2005): 161–71.
- Rutledge, Glenn K., Jordan Alpert, and Wesley Ebisuzaki. "NOMADS: A Climate and Weather Model Archive at the National Oceanic and Atmospheric Administration." *Bulletin of the American Meteorological Society* 87, no. 3 (2006): 327–41.
- Ryall, Anka. "Gender in the Twentieth-Century Polar Archive." In *Arctic Archives: Ice, Memory and Entropy*, edited by Susi K. Frank and Kjetil A. Jakobsen, 177–95. Bielefeld, Germany: transcript, 2019.
- Rydén, Reine. "Archivists and Time: Conceptions of Time and Long-Term Information Preservation among Archivists." *Journal of Contemporary Archival Studies* 6 (2019): Article 6.
- Sahavirta, Harri. "Showing the Green Way: Advocating Green Values and Image in a Finnish Public Library." *IFLA Journal* 38, no. 3 (October 2012): 239–42. <https://doi.org/10.1177/0340035212455624>.
- Salvatore, Cecilia. "Lest They Be Forgotten: Archives, Recordkeeping, and Cultural Heritage Preservation in the Commonwealth of the Northern Marianas Islands (and Micronesia)." *Comma* 2011, no. 1 (2011): 61–69. <https://doi.org/10.3828/comma.2011.1.05>.
- Sampson, Walker. "Thoughts on Environmental Sustainability in Archives." *Walker Sampson* (blog), January 11, 2022. <https://wsampson.blog/2022/01/11/thoughts-on-environmental-sustainability-in-archives/>.
- Samuelson, Anah-Jayne, and Vanessa Evans. "'Real Old-Timey': Storytelling and the Language of Resurgence in Cherie Dimaline's *The Marrow Thieves*." *Studies in the Novel* 54, no. 3 (Fall 2022): 274–92. <https://doi.org/10.1353/sdn.2022.0023>.
- Sare, Laura. "A Summary of Collaborative Projects Working to Preserve Access to Government Data." *Documents to the People* 45, no. 2 (Summer 2017): 7–8. <https://doi.org/10.5860/dtpp.v45i2.6384>.
- Sarkar, Saurav. "Get Fossil Fuels Out of Our Pension, Say Environmental Protection Workers." *Labor Notes*, June 3, 2021. <https://labornotes.org/blogs/2021/06/get-fossil-fuels-out-our-pension-say-environmental-protection-workers>.
- Sassoon, Joanna. "Sharing Our Story: An Archaeology of Archival Thought." *Archives and Manuscripts* 35, no. 2 (November 2007): 40–54.
- Savard, Alain. "How Seven Thousand Quebec Workers Went on Strike against Climate Change." *Labor Notes*, October 25, 2019. <https://labornotes.org/2019/10/how-seven-thousand-quebec-workers-went-strike-against-climate-change>.
- Sayre, Gordon M. "The Alexandrian Library of Life: A Flawed Metaphor for Biodiversity." *Environmental Humanities* 9, no. 2 (November 2017): 280–99. <https://doi.org/10.1215/22011919-4215238>.
- Schaik, Sam van. "Review of The Monumental Challenge of Preservation: The Past in a Volatile World." *The American Archivist* 83, no. 1 (Spring/Summer 2020): 178–81. <https://doi.org/10.17723/0360-9081-83.1.178>.
- Schapiro, Kate. *Time to Be Something Other Than Human: On Attention, Transformation, and Jeff VanderMeer's Southern Reach Trilogy*. Groundloop 98. Buffalo, NY: Essay Press, 2018.
- Schellnack-Kelly, Isabel, and Veli Jiyane. "Tackling Environmental Issues in the Digital Age Through Oral Histories and Oral Traditions from the iSimangaliso Wetland." *Historia* 62, no. 2 (November 2017): 112–29. <https://doi.org/10.17159/2309-8392/2017/v62n2a6>.

- Schlagel, Liz. "Putting DAHLI to Bed: Preservation Tactics for Managing Collections with Limited Means." In *Cold Regions: Pivot Points, Focal Points*, edited by Shelly Sommer and Ann Windnagel, 135–55. Boulder, CO, 2012.  
<https://nsidc.org/sites/default/files/documents/other/plc-24-proceedings-gd-34.pdf>.
- Schlesselman-Tarango, Gina. "The Legacy of Lady Bountiful: White Women in the Library." *Library Trends* 64, no. 4 (Spring 2016): 667–86. <https://doi.org/10.1353/lib.2016.0015>.
- Schotte, Margaret. "Expert Records: Nautical Logbooks from Columbus to Cook." *Information & Culture* 48, no. 3 (2013): 281–322. <https://doi.org/10.1353/lac.2013.0015>.
- Schulman, Sarah. *Let the Record Show: A Political History of ACT UP New York, 1987-1993*. New York: Macmillan, 2021.
- Schwartz, Joan M., and Terry Cook. "Archives, Records, and Power: The Making of Modern Memory." *Archival Science* 2 (2002): 1–19. <https://doi.org/10.1007/BF02435628>.
- Schwier, Carrie, and Carey Champion. "Place-Based Instruction in Archives: Our Pedagogical Roots." *Comma* 2018, no. 1/2 (2020): 195–204. <https://doi.org/10.3828/comma.2018.18>.
- Scott, Bethany. "Estimating Energy Use for Digital Preservation, Part I." *bloggERS!* (blog), October 6, 2020. <https://saers.wordpress.com/2020/10/06/estimating-energy-use-for-digital-preservation-part-i/>.
- . "Estimating Energy Use for Digital Preservation, Part II." *bloggERS!* (blog), October 13, 2020. <https://saers.wordpress.com/2020/10/13/estimating-energy-use-for-digital-preservation-part-ii/>.
- Scott, Bethany, and Diana Dulek. "Waste Not, Want Not: Assessing the Environmental Sustainability of the University of Houston's Digital Preservation Program." In *Proc. IS&T Archiving 2020*, art00011. Society for Imaging Science and Technology, 2020.  
<https://doi.org/10.2352/issn.2168-3204.2020.1.0.49>.
- Scott, Conrad. "'Changing Landscapes': Ecocritical Dystopianism in Contemporary Indigenous SF Literature." *Transmotion* 8, no. 1: Indigeneity and the Anthropocene II (June 6, 2022): 10–38. <https://doi.org/10.22024/UniKent/03/tm.979>.
- Scott, Marcelle, and Robyn Sloggett. "Changed Responses to the Changing Threat of Climate-Induced Fire and Drought." In *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott, 99–117. London: Routledge, 2023.  
<https://doi.org/10.4324/9781003163312-7>.
- Senior, Siobhan. "Decolonizing the Archive: Digitizing Native Literature with Students and Tribal Communities." *Resilience: A Journal of the Environmental Humanities* 1, no. 3 (2014): 69–85.
- Sergeant, David. "The Genre of the Near Future: Kim Stanley Robinson's *New York 2140*." *Genre* 52, no. 1 (April 2019): 1–23. <https://doi.org/10.1215/00166928-7500990>.
- Sesana, Elena, Alexandre S. Gagnon, Chiara Bertolin, and John Hughes. "Adapting Cultural Heritage to Climate Change Risks: Perspectives of Cultural Heritage Experts in Europe." *Geosciences* 8, no. 8 (2018): 305–27. <https://doi.org/10.3390/geosciences8080305>.
- Sesana, Elena, Alexandre S. Gagnon, Chiara Ciantelli, JoAnn Cassar, and John J. Hughes. "Climate Change Impacts on Cultural Heritage: A Literature Review." *Wiley Interdisciplinary Reviews: Climate Change* 12, no. 4 (August 2021): e710. <https://doi.org/10.1002/wcc.710>.
- Seton, Rosemary. "Co-Operative Efforts to Promote and Secure the Archives of Christian Missionary Societies with Special Reference to Those in the Third World." *Comma* 2005, no. 3 (2005): 1–6. <https://doi.org/10.3828/coma.2005.3.3>.

- Severiens, Thomas. "Preservation of Scientific Data (in Natural Sciences)." In *1st International Conference on Preservation of Digital Objects*. Beijing, 2004. <https://hdl.handle.net/11353/10.295002>.
- Shackelford, Laura. "Strange Matters: More-than-Human Entanglements and Topological Spacetimes." In *Surreal Entanglements: Essays on Jeff VanderMeer's Fiction*, edited by Louise Economides and Laura Shackelford, 124–46. New York: Routledge, 2021.
- Shaffer, Dory. "Documents Without Borders: Show Me the (International) Data!" *DttP: Documents to the People* 51, no. 1 (Spring 2023): 5–6. <https://doi.org/10.5860/dttp.v51i1.8017>.
- Shaon, Arif, Sarah Callaghan, Bryan Lawrence, Brian Matthews, Timothy Osborn, Colin Harpham, and Andrew Woolf. "Opening Up Climate Research: A Linked Data Approach to Publishing Data Provenance." *International Journal of Digital Curation* 7, no. 1 (2012). <https://doi.org/10.2218/ijdc.v7i1.223>.
- Shaon, Arif, Carsten Rönnsdorf, Urs Gerber, Kai Naumann, Paul Mason, Andrew Woolf, Michael Kirstein, Marguérite Bos, and Göran Samuelsson. "Long-Term Sustainability of Spatial Data Infrastructures: A Metadata Framework and Principles of Geo-Archiving," 120–29. Singapore, 2011.
- Shaon, Arif, and Andrew Woolf. "Long-Term Preservation for Spatial Data Infrastructures: A Metadata Framework and Geo-Portal Implementation." *D-Lib Magazine* 17, no. 9/10 (September 2011). <https://doi.org/10.1045/september2011-shaon>.
- Shepherd, Elizabeth, Anna Sexton, Oliver Duke-William, and Alexandra Eveleigh. "Risk Identification and Management for the Research Use of Government Administrative Data." *Records Management Journal* 30, no. 1 (2019): 101–23. <https://doi.org/10.1108/RMJ-03-2019-0016>.
- Sheppard, Paul R. "Dendroclimatology: Extracting Climate from Trees." *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 3 (June 2010): 343–52. <https://doi.org/10.1002/wcc.42>.
- Shiraiwa, Yoko. "Rescuing Tsunami-Damaged Photographs in Japan." *Journal of the Institute of Conservation* 36, no. 2 (2013): 195–203. <https://doi.org/10.1080/19455224.2013.820205>.
- Shiue, Hilary Szu Yin, Cooper T. Clarke, and Katrina Fenlon. "Data Rescue at the U.S. National Agricultural Library: Case Studies of 3 Hybrid Collections." Costa Rica, 2020. <https://doi.org/10.13016/af7v-k5dj>.
- Shubinski, Barbara Lynn. "From FSA to EPA: Project DOCUMERICA, the Dustbowl Legacy, and the Quest to Photograph 1970s America." PhD, University of Iowa, 2009. Iowa Research Online. <https://doi.org/10.17077/etd.ernl7umv>.
- Silva, Ana Margarida Dias da, M. Teresa Gonçalves, Helena Freitas, and António Carmo Gouveia. "The Value of the Botany Archive of the University of Coimbra (Portugal) to Biodiversity Research, Crowdsourcing and History of Science Projects." *Comma* 2018, no. 1–2 (2018): 117–26. <https://doi.org/10.3828/comma.2018.11>.
- Silverman, Randy. "Toward a National Disaster Response Protocol." *Libraries & the Cultural Record* 41, no. 4 (Fall 2006): 497–511.
- Simmonds, Jeannette. "Community Matters: A History of Biological Nitrogen Fixation and Nodulation Research, 1965 to 1995." PhD, Rensselaer Polytechnic Institute, 2007. <https://hdl.handle.net/20.500.13015/3930>.
- Simmons, C. Jerry. "DOCUMERICA: Snapshots of Crisis and Cure in the 1970s." *Prologue*, Spring 2009. HathiTrust.

- Simpson, Leanne Betasamosake. *As We Have Always Done: Indigenous Freedom Through Radical Resistance*. Minneapolis, MN: University of Minnesota Press, 2017.
- Skinner, Makala. "A\*CENSUS II: Archives Administrators Survey." Ithaka S+R, January 31, 2023. <https://doi.org/10.18665/sr.318227>.
- Skinner, Makala, and Ioana Hulbert. "A\*CENSUS II All Archivists Survey Report." New York: Ithaka S+R, August 22, 2022. <https://doi.org/10.18665/sr.317224>.
- Sleeman, Patricia. "The Question of What Can We Do in This Political Climate... Has, Again, a Relatively Modest Answer: Small Interventions with Grand Intention." *Digital Preservation Coalition* (blog), November 21, 2018. <https://www.dpconline.org/blog/wdpcd/what-can-we-do-in-this-political-climate>.
- Sloggett, Robyn, and Marcelle Scott. "Finding Unexpected Data from the Historical Record." In *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott, 27–41. London: Routledge, 2023. <https://doi.org/10.4324/9781003163312-3>.
- . "Issues for Institutions: The Imperative for Heritage Organizations to Lead the Way." In *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott, 137–57. London: Routledge, 2023. <https://doi.org/10.4324/9781003163312-9>.
- . "The Local in the Global: Community Impact and Responses." In *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott, 118–36. London: Routledge, 2023. <https://doi.org/10.4324/9781003163312-8>.
- . "The Story of Climate Change: Narratives As Influencers." In *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott, 10–26. London: Routledge, 2023. <https://doi.org/10.4324/9781003163312-2>.
- Smit, Frans. "Records, Hyperobjects and Authenticity." In *Archives in Liquid Times*, edited by Arnoud Glaudemans, Rienk Jonker, and Frans Smit, 248–65. Den Haag: Stichting Archiefpublicaties, 2017. <http://library.oapen.org/handle/20.500.12657/30942>.
- Smith, Abby. "Valuing Preservation." *Library Trends* 56, no. 1 (Summer 2007): 4–25. <https://doi.org/10.1353/lib.2007.0059>.
- Smith, G. J., and J. Rae. "MODES(Archives) at the British Antarctic Survey Archives." *Journal of the Society of Archivists* 12, no. 2 (1991): 95–108. <https://doi.org/10.1080/00379819109514403>.
- Soares, Sara, and Robyn Sloggett. "Oral Histories of Natural Disasters in Timor-Leste." In *Climatic and Environmental Threats to Cultural Heritage*, by Robyn Sloggett and Marcelle Scott, 79–98. London: Routledge, 2023. <https://doi.org/10.4324/9781003163312-6>.
- Soderlund, Patricia D., Adrienne S. Martinez-Hollingsworth, and MarySue V. Heilemann. "Participant Engagement in a Transmedia Storytelling Web-Based App Intervention for Mental Health of Latina Women: Qualitative Analysis." *JMIR Mental Health* 8, no. 1 (2021): e22575. <https://doi.org/10.2196/22575>.
- Soto, Osvaldo Rivera. Interview: Archivo de Medios Audiovisuales of the University of Puerto Rico, Río Piedras Campus. Interview by Ana I. Steidel, December 2018. <https://scalar.usc.edu/works/prlamrecovery/interviewarchivomediouprp>.
- Spencer, Katrina. "Uprooted, Nomadic, and Displaced: The Unspoken Costs of the Upward Climb," December 13, 2022. <http://newsbreaks.infotoday.com/NewsBreaks/Uprooted-Nomadic-and-Displaced-The-Unspoken-Costs-of-the-Upward-Climb-156012.asp>.
- Sprouse, Mark. "Moving Towards Sustainable Operations." Hyattsville, MD, 2011. <https://www.archives.gov/preservation/conferences/2011/presentations/sprouse.pdf>.

- Sraku-Lartey, Margaret, Stella Britwum Acquah, Sparkler Brefo Samar, and Gloria Djaney Djabbletey. "Digitization of Indigenous Knowledge on Forest Foods and Medicines." *IFLA Journal* 43, no. 2 (June 2017): 187–97. <https://doi.org/10.1177/0340035216681326>.
- Sreenath, Shreyas. "(Un)Making the Manual Scavenger: Caste, Contract, and Ecological Uncertainty in Bengaluru, India." *American Ethnologist* 50, no. 3 (August 2023): 491–505. <https://doi.org/10.1111/amet.13202>.
- Staebell, Sandy, and Sue Lynn McDaniel. "On Collaboration: Government Documents and Political Collections in Libraries and Museums." *Documents to the People* 48, no. 1 (Spring 2020): 13–20. <https://doi.org/10.5860/dtpp.v48i1.7336>.
- Staniunas, David. "Adaptive HVAC Use: The Case of the Presbyterian Historical Society." Washington, DC, 2023. [https://whova.com/portal/saaar\\_202307/videos/4YjMzkjMycjM/](https://whova.com/portal/saaar_202307/videos/4YjMzkjMycjM/).
- . "Our Carbon Footprint in the Archives." *Presbyterian Historical Society* (blog), September 9, 2019. <https://www.history.pcusa.org/blog/2019/09/our-carbon-footprint-archives>.
- Starratt, Laura. "Sustainability Initiatives at Emory University." Washington, DC, 2023. [https://whova.com/portal/saaar\\_202307/videos/4YjMzkjMycjM/](https://whova.com/portal/saaar_202307/videos/4YjMzkjMycjM/).
- Steinhart, Gail. "Libraries as Distributors of Geospatial Data: Data Management Policies as Tools for Managing Partnerships." *Library Trends* 55, no. 2: Geographic Information Systems and Libraries (Fall 2006): 264–84.
- Stempler, Amy. "The Use and Availability of Environmental Activism Collections in Academic Archives." New Orleans, LA, 2013. <http://files.archivists.org/pubs/proceedings/ResearchForum/2013/Stempler-ResearchForumPaper2013.pdf>.
- Stephenson, Peter Mark. "The Double Bind and the Double Burden: Implications for the Professional Education and Practice of Indigenous Environmental Health Practitioners." PhD, University of Technology, Sydney, 2001. <https://eprints.batchelor.edu.au/id/eprint/305>.
- Stevens, Sharon McKenzie. "Speaking Out: Toward an Institutional Agenda for Refashioning STS Scholars as Public Intellectuals." *Science, Technology, & Human Values* 33, no. 6 (November 2008): 730–53. <https://doi.org/10.1177/0162243907310162>.
- Stevens, Sharon Te Aipiti. "On Being in Time for Transition." In *Fleeing Vesuvius: Overcoming the Risks of Economic and Environmental Collapse*, edited by Richard Douthwaite, Gillian Fallon, and Living Economies, New Zealand edition. Carleton, NZ: Living Economies Educational Trust, 2011.
- Streeby, Shelley. *Imagining the Future of Climate Change: World-Making Through Science Fiction and Activism*. Oakland, CA: University of California Press, 2018.
- Strombeck, Andrew. "Inhuman Writing in Jeff VanderMeer's Southern Reach Trilogy." *Textual Practice* 34, no. 8 (2020): 1365–82. <https://doi.org/10.1080/0950236X.2019.1583684>.
- Stuchel, Dani. "Material Provocations in the Archives." *Journal of Critical Library and Information Studies* 3, no. 1: Libraries and Archives in the Anthropocene (2020). <https://doi.org/10.24242/jclis.v3i1.103>.
- Sturgeon, Stephen C. "A Different Shade of Green: Documenting Environmental Racism and Justice." *Archival Issues* 21, no. 1 (1996): 33–46.
- Sugimoto, Shigeo. "Digital Archives and Metadata as Critical Infrastructure to Keep Community Memory Safe for the Future – Lessons from Japanese Activities." *Archives and Manuscripts* 42, no. 1: Special Issue: Participatory archives in a world of ubiquitous media (2014): 61–72. <https://doi.org/10.1080/01576895.2014.893833>.

- Summers, Ed. "TUI Fun with RepoData." *Inkdroid* (blog), August 28, 2023. <https://inkdroid.org/2023/08/28/repodata/>.
- Surtees, Doug. "Privacy: A Look at the Disenfranchised." In *Better Off Forgetting? Essays on Archives, Public Policy and Collective Memory*, edited by Mona Holmlund and Cheryl Avery, 60–70. Toronto, ON: University of Toronto Press, 2010.
- Sutherland, Tonia. "Archival Amnesty: In Search of Black American Transitional and Restorative Justice." *Journal of Critical Library and Information Studies* 1, no. 2: Critical Archival Studies (2017): 1–23. <https://doi.org/10.24242/jclis.v1i2.42>.
- Sutton, David C. "Safe Havens for Archives at Risk: A New International Initiative." *Comma* 2020, no. 1–2 (August 2021): 87–96. <https://doi.org/10.3828/comma.2020.5>.
- Svensson, Anna. "Global Plants and Digital Letters: Epistemological Implications of Digitising the Directors' Correspondence at the Royal Botanic Gardens, Kew." *Environmental Humanities* 6, no. 1 (May 2015): 73–102. <https://doi.org/10.1215/22011919-3615907>.
- Swartz, Nikki. "Dealing with Disaster." *Information Management Journal* 40, no. 4 (August 2006): 28–34.
- Tadic, Linda. "On Earth Day 2016, There Is More to Be Done." *Project\_arcc* (blog), April 22, 2016. <https://projectarcc.org/2016/04/22/on-earth-day-2016-there-is-more-to-be-done/>.
- . "The Environmental Impact of Digital Preservation." Pittsburgh, PA, 2016.
- . "The Environmental Impact of Digital Preservation." May 2023. [https://static1.squarespace.com/static/56844dac0ab37742d396c9a6/t/647fd7ce2692a809ef3390f3/1686099922254/Environmental\\_Impact\\_of\\_Digital\\_Preservation\\_Tadic\\_short\\_20230502.pdf](https://static1.squarespace.com/static/56844dac0ab37742d396c9a6/t/647fd7ce2692a809ef3390f3/1686099922254/Environmental_Impact_of_Digital_Preservation_Tadic_short_20230502.pdf).
- Tallman, Nathan. "A 21st Century Technical Infrastructure for Digital Preservation." *Information Technology and Libraries* 40, no. 4 (December 2021). <https://doi.org/10.6017/ital.v40i4.13355>.
- Tallman, Nathan, and Hannah Wang. "Seeking Sustainability: Developing a Modern Distributed Digital Preservation System." In *Proceedings of the 18th International Conference on Digital Preservation 2022*, 340–44. Glasgow, Scotland: Digital Preservation Coalition, 2022. <https://doi.org/10.7207/ipres2022-proceedings>.
- Tamminen, Sakari. *Biogenetic Paradoxes of the Nation: Finncattle, Apples, and Other Genetic-Resource Puzzles*. Durham, NC: Duke University Press, 2019.
- Tan, JS, Nataliya Nedzhvetskaya, and Emily Mazo. "Tech Worker Organizing: Understanding the Shift from Occupational to Labor Activism." arXiv, July 28, 2023. <https://doi.org/10.48550/arXiv.2307.15790>.
- Tang, Lydia, Katarina Hering, Alison Clemens, Bridget Malley, and Amy Wickner. "Summer 2020 Archival Workers Emergency Fund Survey Summary." *Archival Workers Emergency Fund* (blog), November 10, 2020. <https://awefund.wordpress.com/2020/11/10/summer-2020-archival-workers-emergency-fund-survey-summary/>.
- Tansey, Eira. *A Green New Deal for Archives*. Alexandria, VA: Council on Library and Information Resources, 2023. <https://www.clir.org/pubs/reports/a-green-new-deal-for-archives/>.
- . "A Green New Deal for Archives Preview," November 7, 2022. <https://eiratansey.com/2022/11/07/a-green-new-deal-for-archives-preview/>.
- . "A Green New Deal for Archivists," July 30, 2020. <https://eiratansey.com/2020/07/30/a-green-new-deal-for-archivists/>.

- . “A Multitude of Problems Needs a Multitude of Voices.” *Project\_arcc* (blog), September 22, 2015. <https://projectarcc.org/2015/09/22/a-multitude-of-problems-needs-a-multitude-of-voices/>.
- . “ARCChivists, Keep Your Eye on OpenGov Efforts.” *Project\_arcc* (blog), January 18, 2017. <https://projectarcc.org/2017/01/18/arcchivists-keep-your-eye-on-opengov-efforts/>.
- . “Archival Adaptation to Climate Change.” *Sustainability: Science, Practice and Policy* 11, no. 2 (2015): 45–56. <https://doi.org/10.1080/15487733.2015.11908146>.
- . “Archival Adaptation to Climate Change.” Pittsburgh, PA, 2016.
- . “Challenges of Climate Change.” *Issues & Advocacy* (blog), January 26, 2016. <https://issuesandadvocacy.wordpress.com/2016/01/26/challenges-of-climate-change/>.
- . “Regulation Requires Records: Access to Fracking Information in the Marcellus/Utica Shale Formations.” *KULA: Knowledge Creation, Dissemination, and Preservation Studies* 2, no. 1 (2018). <https://doi.org/10.5334/kula.21>.
- . “Regulatory Recordkeeping, Worker Safety, and United States Extractive Industries.” *The Extractive Industries and Society* 7, no. 1 (January 2020): 209–16. <https://doi.org/10.1016/j.exis.2020.01.010>.
- . “Review of *Archival Futures*.” *Journal of Contemporary Archival Studies* 6 (2019): Article 17.
- . “Review of Environmental Information: Research, Access and Environmental Decisionmaking by Sarah Lamdan.” *The American Archivist* 81, no. 2 (Fall/Winter 2018): 537–41. <https://doi.org/10.17723/0360-9081-81.2.537>.
- . “The Academic Enclosure of *American Archivist*.” *The American Archivist* 86, no. 1 (Spring/Summer 2023): 117–40. <https://doi.org/10.17723/2327-9702-86.1.117>.
- . “The Voice of One Crying Out in the Wilderness: Preservation in the Anthropocene.” Presented at the Preservation and Archiving Special Interest Group Fall 2016 Meeting, New York, NY, October 28, 2016. <https://eiratansey.com/2016/10/28/pasig-2016-talk-text/>.
- . “U.S. Archives and Climate Change.” Champaign-Urbana, IL, 2021. [https://mediaspace.illinois.edu/media/t/1\\_ak1ec2yu](https://mediaspace.illinois.edu/media/t/1_ak1ec2yu).
- . “We’ve Got to Stop Meeting Like This: A Proposal for HACS (Hybrid Archives Conference Strategy).” *Project\_arcc* (blog), August 2, 2021. <https://projectarcc.org/2021/08/02/weve-got-to-stop-meeting-like-this-a-proposal-for-hacs-hybrid-archives-conference-strategy/>.
- . “What Can Archivists Do about Concerns Regarding Federal Climate and Environmental Data?” *Issues & Advocacy* (blog), December 14, 2016. <https://issuesandadvocacy.wordpress.com/2016/12/14/what-can-archivists-do-about-climate-and-environmental-data/>.
- . “What We Don’t Know About What We Can’t See: Information and Hidden Infrastructure.” Edmonton, AB, 2019. <http://eiratansey.com/2019/11/27/what-we-dont-know-about-what-we-cant-see-information-and-hidden-infrastructure/>.
- . “When the Unbearable Becomes Inevitable: Archives and Climate Change.” New Haven, CT, 2017. <https://eiratansey.com/2017/05/16/fierce-urgencies-2017/>.
- . “You’ve Heard about the Concerns Regarding Federal Climate and Environmental Data. So What’s next?” *Project\_arcc* (blog), December 15, 2016. <https://projectarcc.org/2016/12/15/youve-heard-about-the-concerns-regarding-federal-climate-and-environmental-data-so-whats-next/>.

- Tansey, Eira, and Hillel Arnold. "For Good Measure: The Role of Regulatory Records in Environmental Maintenance." Philadelphia, PA, 2017. <https://scholar.uc.edu/show/d217qp51v>.
- Tansey, Eira, and Ben Goldman. "Fonds Farewell: Mapping American Archival Vulnerabilities Due to Climate Change." Atlanta, GA, 2016.
- . "S2 E2: Archivists Against the Climate Crisis." Interview by Nicole Kang Ferraiolo. Podcast, 23:27, November 9, 2020. Material Memory. <https://material-memory.clir.org/2020/11/09/archivists-against-the-climate-crisis/>.
- Tate, Winifred. "Proxy Citizenship and Transnational Advocacy: Colombian Activists from Putumayo to Washington, DC." *American Ethnologist* 40, no. 1 (February 2013): 55–70. <https://doi.org/10.1111/amet.12005>.
- Taylor, Hugh A. "Recycling the Past: The Archivist in the Age of Ecology." *Archivaria* 35: Proceedings of the ACA Seventeenth Annual Conference, Montreal 12-15 September 1992 (Spring 1993): 203–13. <https://archivaria.ca/index.php/archivaria/article/view/11898>.
- . "Some Concluding Thoughts." *The American Archivist* 57, no. 1: Special Issue: 2020 Vision (Winter 1994): 138–43. <https://doi.org/10.17723/aarc.57.1.q385p56577821157>.
- Taylor, Marie Balsley. "Recovering Indigenous Kinship: Community, Conversion, and the Digital Turn." In *Afterlives of Indigenous Archives: Essays in Honor of the Occom Circle*, edited by Ivy Schweitzer and Gordon Henry, 139–55. Hanover, NH: Dartmouth College Press, 2019. <https://digitalcommons.dartmouth.edu/facoa/3983>.
- Taylor, Pat. "The Continuing Preservation of Traceable Evidence." *Records Management Journal* 4, no. 2 (February 1994): 77–84.
- Templer, Julian. "System for Protecting Records." In *Disaster Planning in Jamaica: Safeguarding Documents and Vital Data*, edited by Hyacinth Brown, 11–13. Kingston, Jamaica: Jamaica Library Association, 1989.
- Tenaglia, Mônica, Georgete Medleg Rodrigues, Iane Maria da Silva Batista, and Gilberto Gomes Cândido. "The Training of Archivists and Access to Information about the Environment and the Amazon in Brazil." *Comma* 2021, no. 2 (2023): 331–43. <https://doi.org/10.3828/coma.2021.30>.
- Teygeler, René. "Preservation of Archives in Tropical Climates. An Annotated Bibliography." Paris/The Hague/Jakarta: International Council on Archives/National Archives of the Netherlands/National Archives of the Republic of Indonesia, 2001.
- "The State of State Records: A Statistical Report on State Archives and Records Management Programs in the United States." Frankfort, KY: Council of State Archivists, 2021. <https://www.statearchivists.org/viewdocument/2021-the-state-of-state-records-a>.
- Theimer, Kate. "What Is the Professional Archivist's Role in the Evolving Archival Space?, Society of Georgia Archivists Annual Meeting Keynote Address, 2014." *Provenance, Journal of the Society of Georgia Archivists* 32, no. 1 (2014): 11–27.
- Thickett, David, and Paul Lankester. "Critical Knowledge Gaps in Environmental Risk Assessment and Prioritising Research." *Collections: A Journal for Museum and Archives Professionals* 8, no. 4 (Fall 2012): 281–96. <https://doi.org/10.1177/155019061200800403>.
- Thompson, Gloria A. "From Profile to Policy: A Minnesota Historical Society Case Study in Collection Development." *The Midwestern Archivist* 8, no. 2 (1983): 29–39.
- Thurlow, Elisabeth. "It's Not Easy Being Green: Evaluating the Impact of Digital Preservation." *Digital Preservation Coalition* (blog), November 22, 2021. <https://www.dpconline.org/blog/wdpd/blog-elisabeth-thurlow-wdpd>.

- Tiainen, Mikko, Juha Lehtonen, Heikki Helin, and Johan Kylander. "Calculating the Carbon Footprint of Digital Preservation." In *19th International Conference on Digital Preservation 2023*, 163–68. Champaign-Urbana, IL, 2023.
- Tidrick, Heather. "'Gadžology' as Activism: What I Would Have Ethnography Do for East European Roma." *Collaborative Anthropologies* 3 (2010): 121–31. <https://doi.org/10.1353/cla.2010.0012>.
- Tillman, Ruth Kitchin. "Indispensable, Interdependent, and Invisible: A Qualitative Inquiry into Library Systems Maintenance." *College & Research Libraries* 84, no. 1 (January 2023): 121–36. <https://doi.org/10.5860/crl.84.1.121>.
- Todd, David. "Texas Legacy." *Oral History Forum d'histoire Orale* 30: Talking Green: Oral History and Environmental History (2010). <http://www.oralhistoryforum.ca/index.php/ohf/article/view/394>.
- Toepfer, Georg. "On Similarities and Differences between Cultural and Natural Archives." In *Arctic Archives: Ice, Memory and Entropy*, edited by Susi K. Frank and Kjetil A. Jakobsen, 21–36. Bielefeld, Germany: transcript, 2019.
- Tola, Miriam. "The Archive and the Lake: Labor, Toxicity, and the Making of Cosmopolitical Commons in Rome, Italy." *Environmental Humanities* 11, no. 1 (May 2019): 194–215. <https://doi.org/10.1215/22011919-7349499>.
- Toosi, Fereshteh. "UP THE CREEK! A Site-Specific Oral History Project." *Oral History Forum d'histoire Orale* 30: Talking Green: Oral History and Environmental History (2010). <http://www.oralhistoryforum.ca/index.php/ohf/article/view/391>.
- Trinkaus-Randall, Gregor, James Reilly, and Patricia Ford. "The Massachusetts Experiment: The Role of the Environment in Collection Preservation." *The American Archivist* 77, no. 1 (Spring/Summer 2014): 133–50. <https://doi.org/10.17723/aarc.77.1.kk006ng47132715j>.
- Trouillot, Michel-Rolph. *Global Transformations: Anthropology and the Modern World*. New York: Palgrave Macmillan, 2003.
- . *Silencing the Past: Power and the Production of History*. Boston, MA: Beacon Press, 1995.
- Tucker, Susan. "Hurricane Katrina: Notes from the Field." *Southwestern Archivist*, November 2005.
- Turhan, Cihan, Zeynep Durmus Arsan, and Gulden Gokcen Akkurt. "Impact of Climate Change on Indoor Environment of Historic Libraries in Mediterranean Climate Zone." *International Journal of Global Warming* 18, no. 3/4 (2019): 206–20. <https://doi.org/10.1504/IJGW.2019.101083>.
- Turner, Christina. "Water as Wahkohtowin in Cherie Dimaline's *The Marrow Thieves*." *Studies in American Indian Literatures* 33, no. 3–4 (Fall-Winter 2021): 98–124. <https://doi.org/10.1353/ail.2021.0011>.
- Turner, Jane. "Working Cooperatively for a Sustainable Future: TotalArchives in Nanaimo." *Archivaria* 39 (Spring 1995): 177–83.
- Turpin, Martin. "Sustainable Design Approach to Preservation Centers." *International Preservation News*, December 2011.
- Uehlein, Joe. "Making Climate Protection Worker-Friendly." *Labor Notes*, June 16, 2010. <https://labornotes.org/2010/06/making-climate-protection-worker-friendly>.
- United Nations Special Rapporteur on the human rights of migrants. "Report on the Impact of Climate Change and the Protection of the Human Rights of Migrants." Geneva, Switzerland:

- Office of the United Nations High Commissioner for Human Rights (OHCHR), July 19, 2022. <https://daccess-ods.un.org/access.nsf/Get?OpenAgent&DS=A/77/189&Lang=E>.
- Upward, Frank, Sue McKemish, and Barbara Reed. "Counterpoint: Archivists and Changing Social and Information Spaces: A Continuum Approach to Recordkeeping and Archiving in Online Cultures." *Archivaria* 72 (Fall 2011): 197–237.
- Urbec, Karen, Audrey Mickle, and Lisa Raymond. "Data on Deck: A Case Study of a Historic Undersea Film and Video Digitization Project." *Journal of Contemporary Archival Studies* 10 (2023): Article 11.
- U.S. Geological Survey. "Hydrologic Unit Map," December 1, 2016. <https://water.usgs.gov/GIS/regions.html>.
- U.S. Global Change Research Program. "Climate Mapping for Resilience and Adaptation Assessment Tool," n.d. <https://livingatlas.arcgis.com/assessment-tool/home/>.
- Valpy, Richard D. "For the Purpose of Accountability: The Need for a Comprehensive Recordkeeping Act." *Archivaria* 88 (Fall 2019): 198–229.
- Van Malssen, Kara. "Recovering the Collection, Establishing the Archive: A Case Study on the Recovery of Eyebeam Art+Technology Center's Multimedia Collection Following Superstorm Sandy." AudioVisual Preservation Solutions, April 2013. <https://www.weareavp.com/wp-content/uploads/2013/05/RecoveringTheEyebeamCollection.pdf>.
- Van Wingen, Rachel Senner, Fred Hathorn, and J. Timothy Sprehe. "Principles for Information Technology Investment in U.S. Federal Electronic Records Management." *Journal of Government Information* 26, no. 1 (1999): 33–42.
- VanderMeer, Jeff. *Acceptance*. New York: Farrar, Straus and Giroux, 2014.
- . *Annihilation*. New York: Farrar, Straus and Giroux, 2014.
- . *Authority*. New York: Farrar, Straus and Giroux, 2014.
- Varma, Saiba. "The Medical Net: Patients, Psychiatrists and Paper Trails in the Kashmir Valley." PhD, Cornell University, 2013. <https://hdl.handle.net/1813/34122>.
- Vaughn, Sarah E. "Between a Promise and a Trench: Citizenship, Vulnerability, and Climate Change in Guyana." PhD, Columbia University, 2013. <https://doi.org/10.7916/D8154GDR>.
- . "Reconstructing the Citizen: Disaster, Citizenship, and Expertise in Racial Guyana." *Critique of Anthropology* 32, no. 4 (December 2012): 359–87. <https://doi.org/10.1177/0308275X12467718>.
- Vavassori, Valentina, Eirini Goudarouli, and Jane Winters. "Archives and the Environment Report." OSF Preprints, September 19, 2023. <https://doi.org/10.31219/osf.io/pkbg5>.
- Veale, Lucy, James P. Bowen, and Georgina H. Endfield. "'Instead of Fetching Flowers, the Youths Brought in Flakes of Snow': Exploring Extreme Weather History through English Parish Registers." *Archives and Records* 38, no. 1: Archives and Public History: Places, Pasts and Identities (2017): 119–42. <https://doi.org/10.1080/23257962.2016.1260531>.
- Velásquez, Teresa Angélica. "Going Green: Sustainable Mining, Water, and the Remaking of Social Protest in Post-Neoliberal Ecuador." PhD, University of Texas at Austin, 2012. <http://hdl.handle.net/2152/19460>.
- Vellino, André. "Harmonizing the Metadata Among Diverse Climate Change Datasets." *International Journal of Digital Curation* 10, no. 1 (2015). <https://doi.org/10.2218/ijdc.v10i1.367>.
- Venter, Katherine, Denise Currie, and Martin McCracken. "'You Can't Win': The Non-Profit Double-Bind and Experiences of Organisational Contradictions in the Non-Profit and

- Voluntary Sector.” *Work, Employment and Society* 33, no. 2 (April 2019): 244–61. <https://doi.org/10.1177/0950017017713949>.
- Vera, Lourdes A., Lindsay Dillon, Sara Wylie, Jennifer Liss Ohayon, Aaron Lemelin, Phil Brown, Christopher Sellers, Dawn Walker, and Environmental Data and Governance Initiative. “Data Resistance: A Social Movement Organizational Autoethnography of the Environmental Data and Governance Initiative.” *Mobilization* 23, no. 4 (December 2018): 511–29. <https://doi.org/10.17813/1086-671x-24-4-511>.
- Vera, Lourdes A., Dawn Walker, Michelle Murphy, Becky Mansfield, Ladan Mohamed Siad, Jessica Ogden, and EDGI. “When Data Justice and Environmental Justice Meet: Formulating a Response to Extractive Logic through Environmental Data Justice.” *Information, Communication & Society* 22, no. 7: Data Justice (May 2019): 1012–28. <https://doi.org/10.1080/1369118X.2019.1596293>.
- Ville, Marion. “2013 - 2023: A Review of Ten Years of Email Archiving in France.” In *19th International Conference on Digital Preservation 2023*, 16–23. Champaign-Urbana, IL, 2023.
- Vinson, Emily. “Applying an Established Format to the Houston Archives Bazaar.” *Preservation, Digital Technology & Culture* 48, no. 1 (March 2019): 46–53. <https://doi.org/10.1515/pdte-2018-0034>.
- Wainwright, Irene. “New Orleans Public Library Spared Major Damage in Hurricane Katrina.” *Southwestern Archivist*, November 2005.
- Walch, Victoria Irons, Nancy Beaumont, Elizabeth Yakel, Jeannette Bastian, Nancy Zimmelman, Susan Davis, and Anne Diffendal. “A\*CENSUS (Archival Census and Education Needs Survey in the United States).” *The American Archivist* 69, no. 2 (Fall/Winter 2006): 291–419. <https://doi.org/10.17723/aarc.69.2.d474374017506522>.
- Walker, Dawn, Eric Nost, Aaron Lemelin, Rebecca Lave, and Lindsay Dillon. “Practicing Environmental Data Justice: From Datarescue to Data Together.” *Geo: Geography and Environment* 5, no. 2 (2018). <https://doi.org/10.1002/geo2.61>.
- Wallace, Allaina M. “Asking for Trouble: Preparing for Emergency to Prevent the Disaster.” In *Cold Regions: Pivot Points, Focal Points*, edited by Shelly Sommer and Ann Windnagel, 100–106. Boulder, CO, 2012. <https://nsidc.org/sites/default/files/documents/other/plc-24-proceedings-gd-34.pdf>.
- Wallace, David A. “Defining the Relationship between Archives and Social Justice.” edited by David A. Wallace, Wendy M. Duff, Renée Saucier, and Andrew Flinn, 22–51. London: Routledge, 2020.
- Wallis, Julian C., Christine L. Borgman, Matthew S. Mayernik, and Alberto Pepe. “Moving Archival Practices Upstream: An Exploration of the Life Cycle of Ecological Sensing Data in Collaborative Field Research.” *International Journal of Digital Curation* 3, no. 1 (2008). <https://doi.org/10.2218/ijdc.v3i1.46>.
- Walshe, Rory A., and Aideen M. Foley. “Learning from the Archives of Island Jurisdictions: Why and How Island History Should Inform Disaster Risk Reduction and Climate Action.” *Small States & Territories* 4, no. 2 (November 2021): 205–30.
- Wang, Qi. “Family Relations of Middle-Aged Citizens in Contemporary Urban China: A Grounded Theory Approach.” *International Journal of Sociology and Social Policy* 41, no. 13/14 (2021): 67–80. <https://doi.org/10.1108/IJSSP-06-2021-0163>.
- Wareham, Evelyn. “From Explorers to Evangelists: Archivists, Recordkeeping, and Remembering in the Pacific Islands.” *Archival Science* 2 (2002): 187–207. <https://doi.org/10.1007/BF02435621>.

- Wasim, Roshan. "Corporate (Non)Disclosure of Climate Change Information." *Columbia Law Review* 119, no. 5 (2019): 1311–54.
- Wasman, Wendy, Thomas R. Beatman, Shanon Donnelly, Kathryn M. Flinn, Jeremy Spencer, and Ryan J. Trimbath. "Branching Out: Using Historical Records to Connect with the Environment." *Journal of Interactive Technology and Pedagogy*, no. 14: Themed Issue on Teaching&Research with Archives (January 2019).  
<https://cuny.manifoldapp.org/read/branching-out-using-historical-records-to-connect-with-the-environment-bc6ec4a0-1889-4ff3-b52b-2986e74e8630/section/8a1fa60d-5e75-4587-abf6-231d82f5220d>.
- Watson, Matthew Clay. "Assembling the Ancient: Public Science in the Decipherment of Maya Hieroglyphs." PhD, University of Florida, 2010.  
<https://ufdc.ufl.edu/UFE0042044/00001/images>.
- Webb, Chris. "Disaster Recovery in the York Flood of 2000." *Journal of the Society of Archivists* 22, no. 2 (2001): 247–52. <https://doi.org/10.1080/00379810120081181>.
- Weber, Nicholas M., Andrea K. Thomer, Matthew S. Mayernik, Bob Dattore, Zaihua Ji, and Steve Worley. "The Product and System Specificities of Measuring Curation Impact." *International Journal of Digital Curation* 8, no. 2 (November 2013): 223–34.  
<https://doi.org/10.2218/ijdc.v8i2.286>.
- Webster, Ben. "Notes of a Library Worker." *Viewpoint Magazine*, September 25, 2013.  
<https://viewpointmag.com/2013/09/25/notes-of-a-library-worker/>.
- Weizman, Eyal. *Forensic Architecture: Violence at the Threshold of Detectability*. New York: Zone Books, 2017.
- Welch, Todd. "'Green' Archivism: The Archival Response to Environmental Research." *The American Archivist* 62, no. 1 (Spring 1999): 74–94.  
<https://doi.org/10.17723/aarc.62.1.b5083wmj61g73608>.
- Wellum, Caleb. "The Ambivalent Aesthetics of Oil: Project Documerica and the Energy Crisis in 1970s America." *Environmental History* 22 (October 2017): 723–32.  
<https://doi.org/10.1093/envhis/emx085>.
- Werth, Robert. "The Construction and Stewardship of Responsible yet Precarious Subjects: Punitive Ideology, Rehabilitation, and 'Tough Love' among Parole Personnel." *Punishment & Society* 15, no. 3 (July 2013): 219–46. <https://doi.org/10.1177/1462474513481720>.
- Wessell, Adele, and Clare Thorpe. "Keeping the Archives above Water: Preserving Regional Heritage in Times of Accelerated Climate Change." *Archival Science* 23 (2023): 609–27.  
<https://doi.org/10.1007/s10502-023-09424-8>.
- Wheeler, Dennis. "Archives and Climatic Change: How Old Documents Offer a Key to Understanding the World's Weather." *Archives* 31, no. 115 (October 2006): 119–32.
- Whitaker, Linda A., and Melanie I. Sturgeon. "The Arizona Summit: Tough Times in a Tough Land." *Journal of Western Archives* 1, no. 1: Inaugural Issue (2010): Article 3.
- Whitelaw, Mitchell. "Mashups and Matters of Concern: Generative Approaches to Digital Collections." *Open Library of Humanities* 4, no. 1 (April 2018): 1–28.  
<https://doi.org/10.16995/olh.291>.
- Whiteley, Andrea, Angie Chiang, and Edna Einsiedel. "Climate Change Imaginaries? Examining Expectation Narratives in Cli-Fi Novels." *Bulletin of Science, Technology & Society* 36, no. 1 (2016): 28–37. <https://doi.org/10.1177/0270467615622845>.

- Whittington, Jerome. "Environmental Data, Guerilla Archiving, and the Trump Transition." *Fieldsights* (blog), January 17, 2017. <https://culanth.org/fieldsights/environmental-data-guerrilla-archiving-and-the-trump-transition>.
- Whyte, Kyle Powys. "Indigenous Science (Fiction) for the Anthropocene: Ancestral Dystopias and Fantasies of Climate Change Crises." *Environment and Planning E: Nature and Space* 1, no. 1–2 (2018): 224–42. <https://doi.org/10.1177/2514848618777621>.
- . "Our Ancestors' Dystopia Now: Indigenous Conservation and the Anthropocene." In *The Routledge Companion to the Environmental Humanities*, edited by Ursula K. Heise, John Christensen, and Michelle Niemann, 206–15. London: Routledge, 2017.
- Wickman, Danielle. "Evolution or Revolution? The Changing Role of City Archives in Australia." *Comma* 2014, no. 1–2 (2015): 121–34. <https://doi.org/10.3828/comma.2014.11>.
- Wickner, Amy. "Getting Started with ProjectARCC: A Student Perspective." *Project ARCC: Archivists Responding to Climate Change* (blog), July 16, 2015. <https://projectarcc.org/2015/07/16/getting-started-with-projectarcc-a-student-perspective/>.
- Wickner, Amy, and Ruth Kitchin Tillman. "Let's Talk About Contingent Labor." Poster presented at the Code4Lib 2020, Pittsburgh, PA, March 10, 2020. <https://osf.io/w76bt/>.
- Wilczek, Eliot. "Archival Engagements with Wicked Problems." *The American Archivist* 84, no. 1 (Spring/Summer 2021): 468–501. <https://doi.org/10.17723/0360-9081-84.2.468>.
- Wildenhaus, Karly. "Wages for Intern Work: Denormalizing Unpaid Positions in Archives and Libraries." *Journal of Critical Library and Information Studies* 2, no. 2 (2018). <https://doi.org/10.24242/jclis.v2i1.88>.
- Williams, Beth Filar. "Integrating Sustainability into the Daily Work Practices: Lessons Learned as a Manager." New York, NY, 2017. <https://credo.library.umass.edu/view/full/mums1010-s08-i005>.
- Williams, Paula. "Exploring the Climate Crisis through the Library's Collections – National Library of Scotland Blog." *National Library of Scotland Blog* (blog), November 10, 2021. <https://blog.nls.uk/exploring-the-climate-crisis/>.
- Williams, Stacie. "Sustainable Digital Scholarship: Shrinking Our Footprint, Broadening Our Impact." *On Archivy* (blog), October 5, 2017. <https://medium.com/on-archivy/sustainable-digital-scholarship-the-limitations-ofspace-662627e19e37>.
- Williamson, Karyn. "Adapting to Abrdn – Towards a Sustainable, Open Source Response to Digital Preservation." *Digital Preservation Coalition* (blog), November 22, 2021. <https://www.dpconline.org/blog/adapting-to-abrdn>.
- Wilson, Imogen G. "Low Resolution .JPGs and Collaborative Networks: Dreaming a Sustainable Digital Archive." Master of Arts, University of Western Ontario, 2022. <https://ir.lib.uwo.ca/etd/8717>.
- Wilson, Shawn. *Research Is Ceremony: Indigenous Research Methods*. Winnipeg, MB: Fernwood Publishing, 2008.
- Winn, Sam. "Our Monstrous Archives: Memory and the End of Time." Virtual Conference, 2021. <https://medium.com/on-archivy/our-monstrous-archives-memory-and-the-end-of-time-d439359ca5f2>.
- Winn, Samantha. "Responses and Retrospectives: Samantha Winn on Mutual Aid in Response to Electoral Frustrations and the Creation of the #52Fund." *ArchivesAWARE!* (blog), February 12, 2020. <https://archivesaware.archivists.org/2020/02/12/responses-and-retrospectives-samantha-winn-on-mutual-aid-in-response-to-electoral-frustrations-and-the-creation-of-the-52fund/>.

- Winn, Samantha R. “Dying Well In the Anthropocene: On the End of Archivists.” *Journal of Critical Library and Information Studies* 3, no. 1: Libraries and Archives in the Anthropocene (2020). <https://doi.org/10.24242/jclis.v3i1.107>.
- . “Radical Empathy in Peer Education: A Case Study on Deconstructing Whiteness.” *Journal of Critical Library and Information Studies* 3, no. 2: Radical Empathy in Archival Practice (2021). <https://doi.org/10.24242/jclis.v3i2.129>.
- Wisecup, Kelly. “Entangled Archives: Cherokee Interventions in Language Collecting.” In *Afterlives of Indigenous Archives: Essays in Honor of the Occom Circle*, edited by Ivy Schweitzer and Gordon Henry, 120–38. Hanover, NH: Dartmouth College Press, 2019. <https://digitalcommons.dartmouth.edu/facoa/3983>.
- Wisner, Melanie. “Uncovering California’s Environmental Collections: A Collaborative Approach (CLIR UCEC),” 2011. <https://clir.org/wp-content/uploads/sites/14/UCECFinalRev.pdf>.
- Witt, Steven W., and Lynne M. Rudasill. “World Sustainable Development Web Archive: Preserving and Disseminating Knowledge for Sustainable Growth.” Cape Town, South Africa: International Federation of Library Associations and Institutions, 2015. <https://library.ifla.org/id/eprint/1117>.
- Wittenberg, Ariel. “A Deadly Delivery Highlights ‘Falsified’ Heat Records at USPS.” POLITICO, December 11, 2023. <https://www.politico.com/news/2023/12/11/usps-major-heat-deaths-00128875>.
- Wolfe, Mark. “Beyond ‘Green Buildings’: Exploring the Effects of Jevons’ Paradox on the Sustainability of Archival Practices.” *Archival Science* 12, no. 1 (March 2012): 35–50. <https://doi.org/10.1007/s10502-011-9143-4>.
- Wolf-Meyer, Matthew. “The Politics of Materiality, or ‘The Left Is Always Late.’” *PoLAR: Political and Legal Anthropology Review* 29, no. 2 (November 2006): 254–75.
- Woodham, Anna, and Matthew Gordon-Clark. “No Man Is an Island Entire of Itself: Legal Frameworks and the Relocation of a Nation’s Archive Due to Rising Sea Levels.” *Comma* 2021, no. 2 (2023): 345–61. <https://doi.org/10.3828/coma.2021.31>.
- Woods, Chris. “Meeting the Montreal Protocol: Alternative Fire Suppression Systems for Archives.” *Journal of the Society of Archivists* 23, no. 2 (2002): 179–86. <https://doi.org/10.1080/0037981022000006363>.
- Woods, Vance. “‘Diversity for Resilience Is What It All Comes down to’: Interview with Crop Trust’s Hannes Dempewolf.” *Archivoz* (blog), August 30, 2020. <https://www.archivozmagazine.org/en/diversity-for-resilience-is-what-it-all-comes-down-to-interview-with-crop-trusts-hannes-dempewolf/>.
- Xausa, Chiara. “Decolonizing the Anthropocene: ‘Slow Violence’ and Indigenous Resistance in Cherie Dimaline’s *The Marrow Thieves*.” *Il Tolomeo* 22 (December 2020): 87–100. <https://doi.org/10.30687/Tol/2499-5975/2020/01/022>.
- Yang, Jingwen. “A Case Study – WhatsApp Records Capture.” *Digital Preservation Coalition* (blog), November 27, 2018. <https://www.dpconline.org/blog/wdpd/whatsapp-records-capture>.
- Yao, David. “Can Postal Vehicles Help Us Fight Climate Change?” *Labor Notes*, April 28, 2021. <https://labornotes.org/blogs/2021/04/can-postal-vehicles-help-us-fight-climate-change>.
- Yazell, Bryan. “A Sociology of Failure: Migration and Narrative Method in US Climate Fiction.” *Configurations* 28, no. 2 (Spring 2020): 155–80. <https://doi.org/10.1353/con.2020.0009>.

- . “Finding Time in Common: Speculative Fiction and the Precariat in Robinson’s *New York 2140*.” In *Precarity in Contemporary Literature and Culture*, edited by Emily J. Hogg and Peter Simonsen, 189–202. London: Bloomsbury Academic, 2021.
- Yeager, Caroline. “Acknowledge, Adapt, and Survive: Environmental Issues and Archives.” Pittsburgh, PA, 2016.
- Yost, Freya R. “Sharing the Data: The Information Policies of NOAA and EUMETSAT.” *IFLA Journal* 42, no. 1 (2016): 5–15. <https://doi.org/10.1177/0340035215611135>.
- Yunes, Erin, Cana Uluak Itchuaqiyaaq, and Kara Long. “The Rematriation Project: Building Capacity for Community Digital Archiving in Northwest Alaska.” In *19th International Conference on Digital Preservation 2023*, 192–96. Champaign-Urbana, IL, 2023.
- Zaman, Mohammad Q. “Vulnerability, Disaster, and Survival in Bangladesh: Three Case Studies.” In *The Angry Earth: Disaster in Anthropological Perspective*, edited by Anthony Oliver-Smith and Susanna M. Hoffman, 192–212. New York: Routledge, 1999.
- Zanella, Patrizia. “Witnessing Story and Creating Kinship in a New Era of Residential Schools: Cherie Dimaline’s *The Marrow Thieves*.” *Studies in American Indian Literatures* 32, no. 3–4 (Fall-Winter 2020): 176–200. <https://doi.org/10.1353/ail.2020.0023>.
- Zapalac, Laurie. “From Institutional Mission to Sustainable Outcome: Cultivating Stewardship through the Planning and Design Process.” edited by Melissa Tedone. Austin, TX, 2007. <https://web.archive.org/web/20100620112941/http://www.ischool.utexas.edu/kilgarlin/gaga/proceedings2008/GAGA07-zapalac.pdf>.
- Zastrow, Jan. “Environmental Sustainability and Climate Action in Libraries and Archives.” *Computers in Libraries*, December 2019.
- Zhang, Meifang, and Yushi Wang. “Energy Efficiency Approaches in Archives and Library Buildings in China.” *Archival Science* 15 (2015): 71–81. <https://doi.org/10.1007/s10502-013-9214-9>.
- Zhang, Su, Shirley V. Baros, Karl Benedict, and Hays A. Barrett. “New Mexico’s Major Initiative on Digitizing, Archiving, and Web-Publishing Historical Aerial Photos.” *Journal of Map & Geography Libraries* 18, no. 3 (2022): 185–208. <https://doi.org/10.1080/15420353.2022.2139789>.
- Zimmerman, Ann. “Partnerships and Opportunities: The Archival Management of Geographic Information Systems.” *Archival Issues* 20, no. 1 (1995): 23–38.