

Research Project on Climate Change and Archives  
Final Report for  
Mellon Foundation, Public Knowledge program

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October 2024

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# Executive Summary

Climate change is already impacting archives. Increasingly frequent and severe emergencies and disasters are disrupting the safety of archives and archivists. In addition to disasters, climate change is ushering in a period of unpredictable and weird weather that makes caring for collections more challenging than in the past. Many of the activities used to preserve and make archives accessible—from heating and cooling systems for stacks management to cloud storage providers for digital preservation—also contribute to increased use of fossil fuels. Such challenges are taking place at a time of major archivist workforce destabilization.

This final report is the culmination of an eighteen-month research project (May 2023-October 2024) for the Public Knowledge program of The Andrew W. Mellon Foundation. This project focused on three areas of concern for climate change adaptation and archives, and utilized extensive literature review, secondary data analysis, and interviews with subject matter experts. Phase 1 focused on **People**. Phase 2 focused on **Infrastructure**. Phase 3 focused on **Collections**. Ten recommendations spanning short-term and long-term efforts are informed by the three major areas of research, and are listed in the table below:

Term	Concern	Recommendation
Short-term	People	Research equitable and appropriate staffing models for archives' climate resilience.
	Infrastructure	Expand and institutionalize collection of location data to monitor American archives' exposure to climate change.
	Infrastructure	Support pilot projects for greenhouse gas emissions studies in archives to benchmark energy use.
	Collections	Carry out a nationwide records survey of environmental justice and climate change-focused collections.
	Collections	Provide support for archives to reprocess existing collections with hidden environmental information.
Long-term	People	Fund a nationwide state-based traveling archivist program prioritizing climate readiness.
	People/ Infrastructure	Invest in continuing education to ensure every archivist receives periodic hands-on disaster preparedness training.
	Infrastructure	Create a nationwide planning effort to support proactive safety and possible relocation for the most vulnerable archives.
	Infrastructure	Develop opportunities for relationship building between climate change adaptation professionals and archivists.
	Collections	Mobilize resources for environmental and climate justice activists to steward their archives.

Phase 1 of the research focused on **People**. Major findings from this section concerned the state of the archivist workforce, including burnout, staff turnover, and professional attrition. There are signs of increasing destabilization within the archivist workforce. Many institutions increasingly rely on short-term positions, large numbers of archives have small workforces despite growing collections and user demands, and some archives do not have any professional staff archivists at all. These workforce issues point to collective action problems, which some organizations have begun to address through efforts like traveling archivist programs or collective bargaining to ensure equitable workplaces. Without a robust and stable workforce, archives are especially vulnerable to the disruptions caused by increasingly severe and unpredictable disasters associated with climate change.

Phase 2 of the research focused on **Infrastructure**. Major findings from this section concerned the digital and physical infrastructure that house archival collections. There are no longitudinal data collection efforts that attempt to obtain information about or from every American archival institution regarding building location, facility type and use, collection size, storage conditions, or level of emergency preparedness. As a result, it is difficult to quantify with confidence the full extent of American archives infrastructure exposure to climate change. Archives infrastructure is an under-documented area with major gaps between best practices for facility management and operational realities. Some infrastructure concerns, like emergency preparedness, have improved significantly in recent years, though there is still much work to be done.

Phase 3 of the research focused on **Collections**. Major findings from this section concerned environmental archival collections, and documentation of environmental and climate justice movements. Environmental collections are of significant interest to many non-academic archives users such as activists, journalists, and policy makers. Many archival collections have extensive environmental information that can be surfaced through dedicated review efforts of existing holdings. Some archives have started to preserve materials from recent environmental and climate justice movements, and archivist outreach efforts are critical to bridging this gap to ensure strong relationships with movement leaders. This work is labor intensive and can be difficult to consistently perform amidst resource constraints.

The scale of climate change impacts to archives are enormous. The recommendations from this project are ambitious and in many cases will require significant coordination, funding, and planning. However, the scale of this issue should not be a reason to hesitate or delay taking action. The good news is that every recommendation has existing precedents or small-scale models that can be expanded to meet the challenge, given appropriate resources and leadership. The Intergovernmental Panel on Climate Change (IPCC) reports that the next decade is critical for climate planning.<sup>1</sup> There will be few second chances when it comes to climate change, due to tipping points which can trigger irreversible ecosystem changes.<sup>2</sup> Given the existing resource constraints that archives already face, the profession needs to begin work *now* to secure the staffing, funding support, and national policymaking to ensure that the cultural heritage of today exists in the future.

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<sup>1</sup> Lee et al., “IPCC, 2023,” 24.

<sup>2</sup> Armstrong McKay et al., “Exceeding 1.5°C Global Warming Could Trigger Multiple Climate Tipping Points.”

# Introduction

Climate change is already impacting archives. Increasingly frequent and severe emergencies and disasters are disrupting the safety of archives and archivists. In addition to disasters, climate change is ushering in a period of unpredictable and weird weather that makes caring for collections more challenging than in the past. Many of the activities used to preserve and make archives accessible—from heating and cooling systems for stacks management to cloud storage providers for digital preservation—also contribute to increased use of fossil fuels. Such challenges are taking place at a time of major archivist workforce destabilization.

Every part of the United States is impacted by climate change, meaning that all archives are increasingly vulnerable to this global concern. The Fifth National Climate Assessment (NCA), representing the recent work of fourteen US federal agencies and nearly 500 authors, observes:

*As the world's climate has shifted toward warmer conditions, the frequency and intensity of extreme cold events have declined over much of the US, while the frequency, intensity, and duration of extreme heat have increased. Across all regions of the US, people are experiencing warming temperatures and longer-lasting heatwaves. Over much of the country, nighttime temperatures and winter temperatures have warmed more rapidly than daytime and summer temperatures. Many other extremes, including heavy precipitation, drought, flooding, wildfire, and hurricanes, are becoming more frequent and/or severe, with a cascade of effects in every part of the country.<sup>3</sup>*

The American archives profession has not yet prioritized climate change adaptation with significant engagement and leadership. To the degree that limited change has begun, typically this work has been on an individual institutional basis or among scattered committed archivists. While there are some local and state disaster response networks, there is far less focus on a comprehensive strategy for archives to proactively cooperate with each other for climate adaptation and resilience.

Although the profession is increasingly discussing climate change, it is often framed as a facility management issue to be addressed primarily through the mitigation of greenhouse gas emissions from building energy use, or through the fortification of buildings to minimize the impacts of disasters to buildings and collections. Such framing minimizes the scale of the issue. Climate change is not just a facilities concern; it affects the people who steward and use archives, and it affects the archival record itself with shifts in professional practice and the documentation of a changing climate.

This final report is the culmination of an eighteen-month research project (May 2023–October 2024) for the Public Knowledge program of the Andrew W. Mellon Foundation. This project focused on three areas of concern for climate change adaptation and archives. Phase 1 focused on **People**. Phase 2 focused on **Infrastructure**. Phase 3 focused on **Collections**. This report contains short-term and long-term recommendations informed by the research, along with summaries of the major findings from each research phase.

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<sup>3</sup> U.S. Global Change Research Program, “Chapter 1,” 16.

This project focused primarily on climate adaptation, not climate mitigation. Mitigation is about reducing greenhouse gas emissions, while adaptation is about preparing and responding to the climate change reality already here and in the future. Climate mitigation and adaptation are both vitally important, however the most urgent needs are on the adaptation side. The cultural heritage sector has slowly started to respond to climate change, but this progress is uneven. This is particularly true for archives, which steward unique materials that are highly vulnerable to damage from climate change. There are major unanswered questions in the archival profession related to long-range adaptation planning, like how institutions and communities on the front lines of climate change will steward their records in the face of short-term disasters, and long-term community migration and sea-level rise.

The structure of this research was deliberately designed to iteratively build off the findings from each phase. Typical cultural heritage approaches to climate change as a facility adaptation issue ignores the myriad ways in which every aspect of archival operations, and the archivists who manage these operations, are impacted by climate change. Archivists rarely connect the dots between climate change and workforce issues. By beginning the research with centering people, this reinforces the critical fact that having well-employed and well-educated archivists is central to addressing the climate crisis in archives.

Organizations that are unable to maintain professional full-time permanent staff are also the same organizations that often have severe vulnerability to climate change. We also know the least about archives that are understaffed or not staffed by professional archivists due to their lack of involvement with professional networks. People are an essential component of maintaining and monitoring climate risks. Without personnel with preservation training, it is difficult to monitor the temperature and humidity of storage environments in order to safely implement sustainable facilities guidelines. Without a conservator on staff, it is difficult to repair items damaged by a burst pipe or flood. Without a digital archivist, it is difficult to make informed adjustments to digital collections to minimize energy usage.

In chronically understaffed organizations, issues directly and indirectly connected to climate change are often neglected, even though one cannot pause the types of archives-threatening emergencies and disasters that are becoming more frequent and more severe. Furthermore, even though there are emerging grant programs related to emergency preparedness and sustainability, the staff capacity at smaller institutions to apply for these grants is often non-existent.

Beyond people and infrastructure, collection concerns remain challenging in the context of the climate crisis. Archivists have long argued that our collections should represent the communities, concerns, and realities of the world. Environmental exploitation has shaped our world for centuries, and anthropogenic fossil fuel-driven climate change is accelerating this process. Given this global reality, archives should reflect the environmental concerns of past and present. However, it is not always clear to what extent archives' collections mirror our environmental realities, or reflect local and global community struggles to shift our current trajectory of climate crisis towards climate justice.

# Recommendations

The archives profession is made of highly educated individuals, and yet the current professional response to climate change mirrors that of society at large. Like most Americans, US archivists are generally aware of and care about climate change, and do not deny that it is one of the major challenges of our time. Yet despite this acknowledgement, far too little is being done about an existential threat that is becoming costlier the longer that action is deferred.

Of the three areas examined in this research project, there is the most awareness and existing precedent to scale up action on **infrastructure** and **collections** concerns. The history of funding within cultural heritage organizations has typically supported one-time or short-term funding that can most easily be deployed for building renovations and improvements, or short-term collection processing and digitization projects. In contrast, there are relatively fewer resource pathways that support long-term staffing and operational support for archives.

The recommendations below are divided into short-term and long-term projects and are informed by the three major areas of the research project. Many of the short-term recommendations may be able to be coordinated through a single funder, institution, or professional association. Most of the long-term recommendations will almost certainly require sustained investment, multiple organizational stakeholders, development of new relationships, and thinking expansively on multi-year timelines in order to be successful. These recommendations can be implemented independently of one another, but the more that can be implemented quickly and concurrently, the more the profession will be able to comprehensively address existing and future challenges.

Many of the recommendations are intertwined, as workforce, infrastructure, and collections issues cannot be easily disentangled from one another. Across these recommendations, all share the following common needs:

- **A people-first approach:** Any efforts to transition archives into a state of climate change adaptation and resilience requires meaningful and equitable labor from archives workers. One of the strongest recurring themes of the research found a lack of dedicated staff to address current archives challenges, let alone the long-term challenges associated with climate change. Archives that are unable to maintain professional full-time permanent staff are typically the same organizations that often have severe or existential infrastructure and collections challenges. If funding cannot be mobilized for permanent staffing, then staffing models that use non-permanent labor should prioritize extending employment terms to a minimum baseline of at least three years, and preferably at least five years. Such time periods are consistent with recent recommendations and findings from archivist workforce studies, as well as Bureau of Labor Statistics findings related to median employee tenure within education and library settings.<sup>4</sup>
- **Cross-institutional collaborations:** Climate change will impact every archive in the United States. The only question that remains about the certainty of impacts is their

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<sup>4</sup> Bredbenner et al., “Nothing About It Was Better Than a Permanent Job’: Report of the New England Archivists Contingent Employment Study Task Force”; Bureau of Labor Statistics, “Employee Tenure in 2022.”

severity and distribution. Due to the all-encompassing challenges of this issue, it is imperative that major climate change projects serve as many archives as possible in order to truly achieve better adaptation in the field. The archives profession is already characterized by institutional inequality, in which a small minority of well-funded archives have many of the critical resources needed for climate adaptation, while the majority of archives do not have the resources needed to deal with current operational and one-time disasters, let alone the increasing disruptions that climate change portends. Operating on principles of climate justice, cross-institutional collaboration projects should center and prioritize the needs of the most vulnerable archives.

- **Top leadership buy-in:** Few leaders of archives or archivist professional associations have made major public commitments to addressing climate change in their archives or professional associations. As a result, existing awareness and interest in addressing climate change typically exists among lower-ranking staff who are unable to direct the budgetary and administrative decisions necessary to address climate change. Without creating a leadership culture of climate change awareness and adaptation, the archives profession will not be able to effectively shift archives in the direction of climate adaptation and resilience.
- **Long-term investments:** Climate change will be an issue that impacts our society and therefore our archives for the rest of our lives, as well as future generations. Developments in scientific research, emerging technologies for energy transition, and shifting policy approaches are constantly reshaping what we know about climate change. Although the recommendations below are divided into short-term and long-term recommendations, efforts should be made to scope or fund projects for a long-term timeline when possible. Because the science and policy of climate change is constantly evolving, funding archives adaptation work on longer-term scales builds in capacity to change course depending on newly emerging climate vulnerabilities (e.g., scientific findings of rapidly accelerating tipping points, a presidential election that speeds up or sets back national climate action efforts, or other scientific or policy shifts).

## Short-Term Recommendations

### Recommendation 1: Research equitable and appropriate staffing models for archives' climate resilience.

The archives profession is rich with standards, best practices, and guidelines, but it lacks comprehensive recommendations on appropriate staffing models for archives. Archives are chronically understaffed, but it is difficult to measure the degree of *how* understaffed archives are, as the field lacks data-supported benchmarks for appropriate staffing numbers for different types of archives.

A collaborative group of archivists from different sectors and professional association leaders should undertake a study to articulate equitable and appropriate staffing models, including the minimum number of full-time equivalent employees necessary for archives of different sectors and sizes to operate at full capacity. Particular attention should be paid to unionized staffing models, as some recent contract negotiations at universities and historical societies have sought to ameliorate organizational reliance on short-term labor, and to increase staff retention through clear salary and promotion pathways. Research from this study should inform new guidelines and standards for potential adoption by major archival associations.

Guidelines and data alone cannot result in a stronger workforce, but the creation of appropriate staffing models provide archivists important evidence-backed material useful for advocacy purposes. Recent research on the archives workforce from the Society of American Archivists, New England Archivists, and Archival Workers Collective has already provided important information on current staffing challenges. Addressing understaffing is critical to ensuring archives are climate resilient organizations, since understaffing contributes to staff burnout, backlogs, and/or deferred maintenance. In the event of a major disaster or increased climate pressure, organizations without adequate archivists on staff will be more vulnerable than those which are appropriately staffed.

While staffing models are more common in other professions such as skilled nursing, there is at least one workforce model example from librarianship related to staffing medical libraries.<sup>5</sup> For additional findings that support this recommendation, see section [Phase 1: People](#).

### Recommendation 2: Expand and institutionalize collection of location data to monitor American archives' exposure to climate change.

In order to determine which archives are most vulnerable to climate change impacts in the short and long-term, the profession must have comprehensive geospatial (location) data concerning American archives. In recent years there have been growing data collection efforts related to identifying the locations of American archives. By using this geospatial data, researchers can assess various land and shoreline-based risks, such as potential impacts of flooding, storm surge, wildfire, extreme heat, and sea-level rise.

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<sup>5</sup> Tarabula et al., "Standards of Practice for Hospital Libraries and Librarians, 2022."

To date, these efforts have been led by interested researchers with short-term grant funding such as Louisiana State University’s PROTECCT-GLAM.<sup>6</sup> Currently, no major cultural heritage organization or professional association has assumed ongoing responsibility for the ongoing maintenance and development of this essential data set. Expanding and institutionalizing these efforts would ensure that the existing data reflect as many archives as possible, is regularly updated, and can be used by researchers and policy makers for informed decision-making.

For additional findings that support this recommendation, see section [Phase 2: Infrastructure](#) and subsection [Data limitations](#).

### Recommendation 3: Support pilot projects for greenhouse gas emissions studies in archives to benchmark energy use.

Robust guidelines for reducing greenhouse gas emissions through facility controls have existed for several years. Greenhouse gas emissions vary significantly between archives of different sizes, holdings characteristics, or regional locations. A pilot project should be carried out to establish the typical emissions profile of various archives in order to establish energy usage profiles. This will allow archives to benchmark themselves against comparable peers, and identify potential areas for reduction. Similar efforts among American museums have recently been carried out with the Carbon Inventory Project.<sup>7</sup>

Currently there are several guidelines and case studies related to the greenhouse gas emissions usage of buildings and facilities housing archives.<sup>8</sup> Similar guidelines and studies are emerging related to the use of digital collections (both digitized analog collections and born-digital content).<sup>9</sup> Given the projected growth of digital content in the coming years, as well as the energy demands of local and cloud storage, creating energy use profiles for digital collections is critical for the accurate measurement of archives’ total energy consumption.

For additional findings that support this recommendation, see section [Phase 2: Infrastructure](#) and subsection [Gaps between best practices and reality](#).

### Recommendation 4: Carry out a nationwide records survey of environmental justice and climate change-focused collections.

Access to environmental and climate change related archival collections is of growing interest to scholars, researchers, journalists, and environmental advocates. Records surveys are systematic surveys designed to identify the existence of archival records on a certain topic or jurisdiction, their location (e.g., in private control or in publicly accessible archives), and topics or geographic areas in which there are major documentation gaps.

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<sup>6</sup> Benoit, III, Trepanier, and Vanos, “GLAM Dataset.”

<sup>7</sup> Sakowski, “The Carbon Inventory Project and Collective Climate Action in the US Cultural Sector.”

<sup>8</sup> Image Permanence Institute, “Implementing Sustainable Energy-Saving Strategies”; Trinkaus-Randall, Reilly, and Ford, “The Massachusetts Experiment.”

<sup>9</sup> Tadic, “The Environmental Impact of Digital Preservation.”

While many archives around the country have rich collections of twentieth-century environmental movements and scientific records, there does not appear to be consistent collection efforts around environmental justice and climate change-focused collections. Conducting a major nationwide records survey would identify subject and geographic areas of strength, areas lacking documentation, and form the foundation for future documentation efforts.

For additional findings that support this recommendation, see section [Phase 3: Collections](#).

### Recommendation 5: Provide support for archives to reprocess existing collections with hidden environmental information.

Many archives have existing collections in their holdings with unrecognized environmental aspects. For example, travel diaries, ship logs, and aerial photographs contain rich sources of environmental information, even if they were not created for environmental purposes. Many archivists have emphasized that directing resources to reappraisal and reprocessing projects to surface previously unappreciated environmental information is more important than acquiring new collections.

Supporting such efforts should also include professional development and continuing education for archivists to gain environmental literacy skills. Archivists who receive training and education in environmental literacy skills will be better positioned to identify collections that may benefit from reprocessing or new description efforts.

Previous projects that have sought to expand access and description of environmental collections include a CLIR Hidden Collections grant awarded to several California institutions that involved processing over 40 environmental collections.<sup>10</sup> For additional findings that support this recommendation, see section [Phase 3: Collections](#) and subsection [Defining and locating environmental collections](#).

## Long-Term Recommendations

### Recommendation 6: Fund a nationwide state-based traveling archivist program prioritizing climate readiness.

The majority of American archives have three or fewer full-time equivalent employees. One-person archives are common, accounting for nearly a quarter of academic and government respondents, and over half of nonprofit and other archives.<sup>11</sup> Many archival records also exist in settings in which there is not a single professional full-time archivist on staff, such as small public libraries, small museums, community archives, religious archives, historical societies, and other similar settings. To quickly scale reaching as many archives as possible, a nationwide

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<sup>10</sup> Wisner, “Uncovering California’s Environmental Collections: A Collaborative Approach (CLIR UCEC).”

<sup>11</sup> Skinner, “A\*CENSUS II: Archives Administrators Survey,” 13–14.

state-based traveling archivist program should be developed to send archivists to these settings to assess the breadth of their records, evaluate critical needs, provide basic education and training for archives management, and identify those archival records most at-risk for climate change impacts.

Several successful traveling archivist programs have been introduced and supported by State Historical Records Advisory Boards (SHRABs), which are currently active in about half of US states and territories. A major dependency associated with this recommendation would be activating SHRABs in states in which they are currently inactive, or finding alternative organizations to function in the place of a SHRAB. These successful models could be scaled up and expanded with the goal of reaching and supporting many more institutions that steward archival records. Current funding limitations for SHRABs typically mean that traveling archivists usually perform baseline assessments and training, but funding a nationwide program at a larger scale would allow for greater hands-on technical assistance and potential longitudinal data collection.

Many of the recommendations in this report involve data collection and training that could be supported by a nationwide traveling archivist program. For additional findings that support this recommendation, see section [Phase 1: People](#) and subsection [Collective Action Problems](#).

### Recommendation 7: Invest in continuing education to ensure every archivist receives periodic hands-on disaster preparedness training.

All archivists need basic hands-on disaster preparedness training skills. This is especially true for smaller institutions that may not have a preservation or conservation specialist on staff. Although there are many online training resources, participating in hands-on salvage exercises provides archivists necessary experience in triage and disaster simulations. Currently, most in-person professional development opportunities require payment, and studies show that professional development funding is decreasing across most sub-sectors of the archives profession.

Investment in basic hands-on disaster preparedness training skills should result in making such training free to attend, and also possibly provide travel/income replacement support for those who do not have workplace professional development support to access professional training. Ideally, such a scaled-up program would mean that archivists should not have to travel long distances to access this training, and it would occur frequently enough that archivists could refresh their skills when moving into a new role or geographic area. In small states, offering training at a state capital might be sufficient, but in larger states such training may need to be offered in several locations, particularly to meet the needs of rural or remote communities. Regional and state archives conferences (such as Midwest Archives Conference or Society of California Archivists) are also ideal locations for training since many often have pre-conference workshops. State-focused emergency preparedness projects such as California's "Ready – Or Not" program are potential models that could be expanded.<sup>12</sup>

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<sup>12</sup> Northeast Document Conservation Center, "Ready – Or Not."

For additional findings that support this recommendation, see section [Phase 1: People](#), subsection [Responsibilities, resourcing, and morale](#), and see section [Phase 2: Infrastructure](#), subsection [Urgency of emergency preparedness](#).

### Recommendation 8: Create a nationwide planning effort to support proactive safety and possible relocation for the most vulnerable archives.

The United States currently has several decentralized efforts related to emergency management and disaster preparedness for cultural heritage. Existing efforts frequently aim to provide training and networking opportunities between cultural heritage workers and emergency management professionals. Phone or hands-on assistance is also frequently deployed in the aftermath of an emergency or disaster. However, these efforts have not begun to address proactive coordination for identifying ways to support the most vulnerable archives before disaster strikes.

Archives that are the most vulnerable to climate change, especially those in coastal areas at risk of combined storm surge and sea-level rise, may eventually need to consider questions of archives relocation due to either the archives' location risk or community-wide migration patterns. Currently, there are no nationwide supporting efforts to assist archivists working through potential issues of relocation. A nationwide effort should also include investigations of potential "receiving archives" that may be able to take custody of archives that can no longer be stewarded in their original locations. As national policy develops related to the topic of managed retreat, parallel planning efforts must take place within the archives profession. Guidelines from the international archives community concerning the treatment of displaced archives due to war and violent conflict may provide a foundation for considering relocation of climate-impacted archives.<sup>13</sup>

For additional findings that support this recommendation, see section [Phase 2: Infrastructure](#) and subsection [Urgency of emergency preparedness](#).

### Recommendation 9: Develop opportunities for relationship building between climate change adaptation professionals and archivists.

There are many examples and models to guide archivists in building relationships with emergency management professionals. Archivists should also begin to develop relationships with climate change adaptation and resilience professionals. Climate adaptation professionals are those individuals working across sectors who directly focus on guiding their organization, sector, or jurisdiction through climate adaptation efforts.<sup>14</sup> Many cities and states now have a senior-level climate adaptation or resilience officer tasked with identifying an area's major climate vulnerabilities and coordinating overall adaptation efforts. Archives are not yet on the radar of most climate adaptation professionals, though increasingly this professional community recognizes the importance of related institutions such as public libraries.

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<sup>13</sup> International Council on Archives, "Expert Group on Shared Archival Heritage."

<sup>14</sup> McGinn, "Adaptation Jobs Explainer: Understanding This Critical and Growing Workforce."

The climate adaptation professional community is rapidly growing, and consists of major professional associations such as the American Society for Adaptation Professionals (ASAP) and conferences like the National Adaptation Forum. Developing opportunities for the archivist community and the climate adaptation community to work together and identify areas of mutual interest will help both communities gain a greater appreciation of each other, and integrate archives into local, state, regional, and national conversations related to climate adaptation policy.

For additional findings that support this recommendation, see section [Phase 2: Infrastructure](#).

### Recommendation 10: Mobilize resources for environmental and climate justice activists to steward their archives.

Environmental and climate justice activists need further support for stewarding their own archives in the short-term, in order to make informed long-term stewardship decisions. Early intervention in preserving records is important as more activist and advocacy organizations now rely primarily on digital recordkeeping platforms. Without early intervention, digital records can easily be lost or damaged. Supporting preservation early in the lifecycle also empowers environmental and climate justice activists to determine whether they wish to maintain their archival records internally for the long-term, or whether the records could be donated or transferred to an archive. A collecting archive may be more likely to take a group's records if those records are already well-organized and processed.

A program of support might be carried out through the efforts of an existing traveling archivist program, or through local/state/regional partnerships between archival organizations and environmental and climate justice organizations.

For additional findings that support this recommendation, see section [Phase 3: Collections](#) and subsection [Environmental justice/environmental movement documentation](#).

# Summary of Research Findings

## Phase 1: People

### Retention and recruitment of archivists

Without a robust and stable workforce, archives are especially vulnerable to the disruptions caused by increasingly severe and unpredictable disasters associated with climate change. To address disasters most effectively, archivists need extensive institutional knowledge, a strong commitment to professional development, and deep ties to the local community. A destabilized workforce has resulted in making archives more vulnerable to the impacts of climate change.

The most prominent workforce issue that has gained attention in the American archivist profession in recent years is the reliance on term positions (also known as contingent, temporary, contract, and project archivist positions). These positions are typically hired for three years or less, and may or may not receive the same benefits as permanent positions. A common finding across recent studies of precarious employment is the degree to which term archivists consider leaving the profession due to the stress associated with these positions. This issue appears to be growing worse over time.<sup>15</sup>

In addition to the well-documented challenges posed by term positions, there is emerging evidence of accelerating institutional turnover of all position types, particularly since the pandemic. The lack of consistent workplace data means it is difficult to determine what constitutes a “baseline” staffing level across a variety of archives (with the notable exception of state archives, due to the Council of State Archivists’ biennial data collection efforts). Some workforce studies occasionally surface information about the number of full-time employees (FTE), and these provide glimpses of staffing levels at different kinds of archives across time.

According to the recent Society of American Archivists A\*CENSUS II survey of archivists and archives administrators, the majority of archives administrators reported leading a department of three or fewer FTE.<sup>16</sup> Small institutions have the fewest archivists on staff, and many archives do not even have a paid archivist. Lyasis conducted a study of small archives and found 40% of responding institutions had only one FTE, and 12% of responding institutions had no paid archives staff.<sup>17</sup> In contrast to small institutions, OCLC surveyed larger research libraries with dedicated special collections/archives units and found special collections/archives had an

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<sup>15</sup> Broadnax et al., “New England Archivists Contingent Employment Study”; Society of American Archivists Issues and Advocacy Section, “Survey on Temporary Labor”; Bredbenner et al., “Nothing About It Was Better Than a Permanent Job’: Report of the New England Archivists Contingent Employment Study Task Force”; Dean et al., “Archival Workers Collective 2022 Survey Summary.”

<sup>16</sup> Skinner, “A\*CENSUS II: Archives Administrators Survey,” 13–14.

<sup>17</sup> Clareson and Grinstead, “Small & Diverse Archival Organization Needs Assessment Project’ Summary Report,” 8.

average of thirteen permanent FTE (eight professional and five paraprofessional) and two temporary FTE (one professional and one paraprofessional).<sup>18</sup>

Increasing research attention is being paid to workplace turnover and professional attrition. Professional attrition represents those who have left the profession entirely (not just moving from one archive to another), and can indicate more serious retention issues within the profession. One of the major findings of A\*CENSUS II was nearly half of archivists are considering leaving the profession:

*One in five respondents are considering leaving the archives profession within the next five years and an additional one in four are not sure if they will leave or stay, leaving just 55 percent of respondents who are confident they will stay in the archives profession in the next five years.*<sup>19</sup>

One of the major reasons archivists provided in the A\*CENSUS II survey for leaving the field is retirement. Those 55 and over are most likely to indicate retirement as their reason for leaving the field. To better understand potential attrition trends among archivists under 55 (i.e., mid-career and early-career attrition), I conducted secondary data analysis and removed the responses from archivists over 55 (along with any blank answers). I then analyzed the responses of those considering leaving the profession by age, income, permanent vs. term status, race, and archives sector.

Once those over 55 are removed, those planning to leave the field drops to 14.8%, and the number who are ambivalent about staying remains roughly the same at 25.8%. Archivists between 35-44 show slightly more interest in leaving the profession than other age groups. Those with permanent positions vs term positions are equally likely to consider leaving the profession at 14.7%. BIPOC and White archivists are almost equally likely to consider leaving the profession. More White archivists expressed certainty about remaining in the field (61%) compared with BIPOC archivists (56.6%). Broken out by sector, academic archivists expressed the most interest in leaving the profession. Government archivists expressed the most commitment to remaining in the profession.

Professional attrition has cascading effects with serious implications for future leadership of archives and archival organizations. While the profession has not extensively studied professional attrition rates by demographics, I believe there are underappreciated attrition risks for mid-career archivists, given the finding that respondents age 35-44 expressed the most interest in leaving the field compared with other age groups. This presents issues for the overall health of the archives profession, because mid-career archivists are those who would be increasingly recruited for leadership roles as directors and heads of archives, as well as major governance roles in professional associations.

Assuming archives as a first career for individuals between 35-44, this group began their work trajectory in the aftermath of the Great Recession of 2008. Those who started their careers

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<sup>18</sup> Dooley and Luce, "Taking Our Pulse: The OCLC Research Survey of Special Collections and Archives," 63.

<sup>19</sup> Skinner and Hulbert, "A\*CENSUS II, All Archivists Survey Report," 57.

during this period experienced greater student loan debt, income setbacks, and lower rates of household formation.<sup>20</sup> This group had barely made up the losses during that time period when the COVID-19 pandemic triggered yet another period of economic uncertainty. Pandemic era hiring freezes may have limited the number of open jobs attractive to mid-career professionals. This may account for why this age range expresses more willingness to leave the field than other age groups.

A\*CENSUS II found BIPOC respondents doubled since the first A\*CENSUS survey, although the overall numbers of BIPOC respondents remain relatively low compared with the US population. If there are slightly more BIPOC archivists under 55 who are ambivalent about remaining in the field, this could potentially lead to backsliding in retaining the gains made over the last several years to diversify the archivist workforce. A\*CENSUS II also found almost half of White archivists felt included within the profession compared to a quarter of BIPOC archivists.<sup>21</sup> These findings signal the profession still has far more work to do to ensure retention of BIPOC archivists.

Taken collectively, the reliance on term positions, institutional turnover, and professional attrition have implications for the ability of archivists to meaningfully engage with climate change mitigation and adaptation. For archivists to make progress on the potentially traumatic changes wrought by climate change, they need to have enough stability to put down community roots, build relationships with allied professionals such as facilities staff and emergency managers, understand the local seasonal weather patterns, and how this impacts the locations in which they work. Archivists who have worked in one location for a long period of time get to know a facility's weak points, for example, by anticipating that leaks may increase during a particular time of year. If there is frequent turnover within an organization, this may mean collections become more vulnerable as the institutional knowledge about facility issues is lost. High rates of professional attrition also pose challenges for leadership within archival organizations and institutions to lead the way on addressing climate change.

## Responsibilities, resourcing, and morale

There is a shortage of jobs in the archives profession, but there is an excessive amount of work expected of the archivist jobs that exist across America's archives. This dynamic reflects the profound and entrenched constraints of limited funding for archives. Across the research, it became clear archivists are shouldering an ever-increasing set of responsibilities and expectations. Without strong leadership and resourcing these issues can lead to demoralization and burnout across the profession. Archivists have always struggled with resourcing issues, but many of the issues identified as potential problems around the 2008 recession have since become a virtually permanent state of being for archives.

There have been several studies conducted on the amount of labor (expressed in terms of hours of work) necessary for processing collections, resulting in many best practices and evidence-based benchmarks. In contrast, there are few best practices or guidelines related to the

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<sup>20</sup> Kent, Emmons, and Ricketts, "Are Millennials a Lost Generation Financially?"

<sup>21</sup> Skinner and Hulbert, "A\*CENSUS II, All Archivists Survey Report," 48.

minimum number of employees necessary to ensure the ongoing operational work of archives, such as collection management, physical and digital preservation, disaster preparedness, reference, and advocacy/outreach. As a result, many archivists are challenged to make internal assessments of how much labor is needed to support these functions, and to advocate to their institution's leadership for additional support for these essential functions. Unlike processing a single collection, most archival functions are not easily or quickly solved with temporary labor. If archives are increasingly vulnerable to unpredictable funding models that rely on temporary labor, this means the key operational work critical to their functioning may become even more compromised.

Institutional budgets exhibit an enormous degree of variability across archives. The A\*CENSUS II Administrators Survey found 61% of administrators manage an archive with an operating budget of less than \$100,000 (excluding staff salaries). A plurality (44%) of respondents reported an operating budget of less than \$20,000.<sup>22</sup> The Lyrasis study of small archives conducted shortly before A\*CENSUS II found similar results: 71% had operating budgets of \$100,000 or less, and 25% had budgets of less than \$10,000.<sup>23</sup> Presumably these figures were inclusive of staff compensation since it was not otherwise specified as in the A\*CENSUS II survey.

Archivists take on enormous student loan debt for their graduate education. Many continue to shoulder significant personal expenses for professional development. Archivists face significant financial and time barriers to professional development training opportunities like workshops and conferences. This problem is especially pronounced in smaller archives with limited budgets and staff coverage issues. The Lyrasis study of small archives found 27% of archives had no training budget, and almost 20% of respondents indicated they maintained no membership in a professional association.<sup>24</sup>

According to the A\*CENSUS II All Archivists Survey, around 58% of respondents receive professional development funding from their employers.<sup>25</sup> However this obscures major differences among archivists in terms of who has access to professional development funding. By conducting secondary data analysis on the A\*CENSUS II data set, I found that government archivists and corporate archivists are least likely to have access to consistent professional development funding compared to other archives sectors. Term positions are more than twice as likely as permanent positions to lack access to professional development funding. If large groups of archivists do not have access to professional development funding, this can inhibit their uptake of professional standards and impact their individual career development and mobility in a competitive job market.

Like the other issues explored above, workplace morale concerns existed long before the pandemic. The pandemic intensified existing issues as workers sought to renegotiate the terms

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<sup>22</sup> Skinner, "A\*CENSUS II: Archives Administrators Survey," 17–18.

<sup>23</sup> Clareson and Grinstead, "Small & Diverse Archival Organization Needs Assessment Project' Summary Report," 9.

<sup>24</sup> Clareson and Grinstead, 20–23.

<sup>25</sup> Skinner and Hulbert, "A\*CENSUS II, All Archivists Survey Report," 119.

of their working life, whether through changing jobs, leaving the profession, or engaging in collective actions such as forming a union. If resourcing and staffing issues are not prioritized within an organization, issues related to turnover, burnout, and overall workplace morale are likely to continue to decline.

## Collective action problems

There is an increasing awareness across the profession of the challenges faced by small and large archives alike. Models that emphasize collective action and networks to address these challenges are the types of solutions that hold the most promise for climate change adaptation. Some states are experimenting with traveling archivist programs to meet the needs of small archives. Some archivists at institutions are pursuing unionization to ensure their workplace needs are met. Finally, archival associations have much to contribute to ensuring the overall health of the profession.

The archives profession has long experimented with projects that hire traveling archivists (sometimes known as visiting, roving, or field archivists) to visit and provide basic education, training, and assistance in various settings. At least eight states currently or recently have had traveling archivist programs, including Alaska, Connecticut, Massachusetts, Michigan, New Mexico, North Carolina, Vermont, and Wyoming. These programs are typically operated in conjunction with the State Historical Records Advisory Board (SHRAB).

State Historical Records Advisory Boards (SHRABs), are currently active in twenty-three states. The authorizing legislation for the National Archives' National Historical Publications & Records Commission (NHPRC) requires states to establish State Historical Records Advisory Boards (SHRABs) to receive grant funding, which are typically associated with state archives. Although the American archives field is quite decentralized, SHRABs serve an important organizational infrastructure function in directing regrants that benefit archives around the state, especially smaller archives. In recent years, traveling archivist programs have been typically supported by SHRABs with a dedicated NHPRC grant, and sometimes supplemented by state funding.

Traveling archivist programs represent an important stop-gap in supporting smaller archives that do not have the resources to hire professional full-time archivists. However, most archives need professional full-time archivists in order to achieve their full operational capacity while meeting professional practice standards for archives stewardship. Within the context of institutions that do employ full-time archivists on staff, there is increasing concern that this labor is at risk of deprofessionalization, burnout, and morale issues. As a result, many archivists are looking at the potential of unionization to resolve workplace challenges in order to improve retention and mitigate staff turnover.

The growing interest in unionization within archives and the cultural heritage sector reflects the renewed interest across the country in the labor movement. Public support for unions is at its highest levels in 50 years. Unions play an important role in reducing economic inequality and narrowing the wage gap between various groups of workers.<sup>26</sup> Although unions cannot necessarily create new jobs, they serve a vital function to ensure existing jobs have good working

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<sup>26</sup> Feiveson, "Labor Unions and the U.S. Economy."

conditions, clear criteria for promotion and disciplinary measures, and a voice in workplace matters. A notable development in this area is the recently formed union of librarians, archivists, and curators at the University of Michigan (LEO-GLAM), which bargained over term positions in their 2022 contract, specifying working conditions and placing a cap on the number of term positions within the bargaining unit. LEO-GLAM’s bargaining unit includes both regular and term appointments.<sup>27</sup>

There is not significant published data on unionized archivists, but the data on unionized librarians is instructive. The AFL-CIO reports 25% of librarians are unionized, and union librarians have higher salaries: “In 2022, librarians who were union members earned 37 percent more per week than their non-union counterparts. Union library professionals are more likely than their non-union counterparts to be covered by a retirement plan, health insurance, and paid sick leave.”<sup>28</sup>

All archivists, regardless of whether they belong to a union or not, benefit from the strength of strong archival professional associations such as the Society of American Archivists, regional or state archival professional associations (such as New England Archivists or the Kentucky Council on Archives), or specialized associations (such as the Association of Moving Image Archivists). Given the decentralization of archives and the isolation many archivists working in small organizations face, archival associations of all sizes and kinds play a vital role in developing professional standards, delivering continuing education, and providing communities of support for archivists based on geography, identity groups and/or professional areas of practice.

All archivist associations are experiencing increasingly difficult challenges in finding volunteers to take on the enormous amount of service work to keep these associations running. Only the largest associations have professional staff members, and even these associations require significant volunteer work to keep the professional association running. With the potential of increasing use of term labor and professional attrition, this means an ever-smaller pool of candidates who have the support of their employers who can run for elected office within these organizations, work on new standards, and create the kinds of professional communities that help archivists feel connected—and therefore hopefully retained—within the overall profession.

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<sup>27</sup> Regents of the University of Michigan and University of Michigan Lecturers’ Employee Organization, Librarians, Archivists, and Curators Bargaining Unit (LEO-GLAM), “Agreement, July 28, 2022-April 20, 2025,” 32–34.

<sup>28</sup> Department for Professional Employees, AFL-CIO, “Library Professionals.”

## Phase 2: Infrastructure

### Data limitations

There are significant data source gaps on archives infrastructure. There are no longitudinal data collection efforts that attempt to obtain information about or from every American archival institution regarding building location, facility type and use, collection size, storage conditions, or level of emergency preparedness. As a result, it is difficult to quantify with confidence how much of the American archives infrastructure is exposed to climate change, the total volume of materials at risk, how much archives themselves contribute to climate change emissions, and whether the situation is growing worse or better.

Data on the locations of archives and information about facilities is the critical baseline information researchers need to conduct a comprehensive assessment of climate change exposure of archives in the United States. Climate change risk mapping typically relies on geospatial data to determine how factors such as elevation, floodplain, urban building density, and other factors may result in specific climate change risk factors for a given location. There has been some progress on collecting and standardizing this data in recent years.

RepoData and PROTECCT-GLAM are two major data projects that have attempted to identify, verify, and consolidate geospatial information related to archives in the United States.<sup>29</sup> While archives location data has steadily improved over the last several years thanks to RepoData and PROTECCT-GLAM, this data still primarily centers on the “official” street address location of an archive. With only a few exceptions of offsite storage locations, neither data set includes all of the storage locations associated with archives. Obtaining this information would be a massive undertaking requiring inquiries with thousands of archives.

The major geolocation data sets do not include building-specific information about the facilities that contain archival materials, such as whether the archival records are located in a basement or attic (spaces notoriously vulnerable to leaks or floods), the building’s elevation, or its landscaping/grading. These factors can significantly influence the vulnerability of an archive to a flood event. Therefore, the location data that is currently available can aid in assessing risk to the street address location of an archive, but many unknown and unreported aspects about archival facilities may either increase or decrease the facility’s potential exposure to damage, particularly flooding disasters.

Studies show a wide range of collection sizes and storage conditions within archives. Archives generally acquire more material than they deaccession (i.e., archival records that are removed from an archive’s ongoing responsibility).<sup>30</sup> This has led to most archives experiencing acute storage issues as collections expand, but facilities do not. Measuring electronic records holdings is both easier and more challenging than measuring physical holdings. On the one hand, computer storage measurements are more standardized units of measurement than cubic/linear

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<sup>29</sup> Tansey, “RepoData”; Tansey and Goldman, Benjamin, “RepoData Repository”; Benoit, III, Trepanier, and Vanos, “GLAM Dataset.”

<sup>30</sup> Skinner, “A\*CENSUS II: Archives Administrators Survey,” 28.

feet and can be recalculated more easily (e.g., from gigabytes to petabytes) to facilitate cross-institutional comparisons. On the other hand, since most organizations maintain multiple copies of the same data for digital preservation purposes, survey instruments need to specify whether reported volume is of *all* digital content, or one set of original content.

There are few studies that go beyond basic and generalized questions about the storage conditions of archival collections, whether physical or digital. However, examining the limited data indicates a wide array of storage conditions across US archives. Given that larger institutions may be more likely to answer a survey in the first place, as well as having the resources and expertise to manage an appropriate storage environment for collections, it is possible that inadequate storage conditions may be underreported in the existing data.

## Gaps between best practices and reality

Over the last two decades, a wide variety of best practices, guidelines, and standards related to archival practice have been introduced and adopted to varying degrees. These developments include archives profession guidelines revising older approaches to appraisal, accessioning, and processing. Other guidelines have emerged from adjacent fields such as museums, libraries, and preservation/conservation and have been adopted by many archives. Many of these approaches were formulated with a recognition of the real material limitations of archives in an attempt to maximize resources, increase service to users, and decrease operating costs.

Although these methodologies are not always formulated for the purpose of strengthening archives in the face of climate change, they often have secondary benefits in increasing institutional adaptation and resilience. For example, the rise of extensible processing practices is an effort to gain as much intellectual control over archives as possible given the challenges of collection backlogs. By prioritizing inventorying as much of an archives' holdings as possible, this information is of enormous value if, and when, a major disaster happens since it supports archivists in identifying what was damaged and lost.<sup>31</sup>

It is widely recognized throughout the US archival profession that there are major gaps between best practices and the operating conditions of most archives. Yet because the overall American archives profession does not have a culture of standardized data reporting and analysis, there are limitations to estimating how many archives are operating according to widely accepted guidelines and best practices. Given that adherence to guidelines and best practices has a cascading effect of increased climate change preparation due to effective management of archival operations, understanding where archives fall short of best practices provides insight into where there may be additional vulnerabilities.

Until recently, facility guidelines for collections-based cultural heritage institutions such as archives recommended maintaining a very narrow and constant temperature and humidity range, typically at 65-70°F/50% relative humidity (RH) with minimal fluctuation.<sup>32</sup> Thanks to extensive research over recent decades, preservation and conservation professionals found that this narrow range has more flexibility than previously thought. Collection stewards can now

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<sup>31</sup> Tansey, "Archival Adaptation to Climate Change."

<sup>32</sup> Image Permanence Institute, "Sustainable Preservation Practices," 5.

allow a greater temperature and humidity range without introducing significant damage to their collections, provided appropriate implementation.

Many small organizations have so much difficulty achieving even basic building space and collection security that they are rarely in a position to introduce sustainable facility practices. Small archives may not even have the ability to adjust temperature and humidity controls in the first place, especially in historic buildings or buildings that were not purpose built for collection storage. These observations are reinforced by survey data demonstrating that many small archives still lack temperature and especially humidity controls.<sup>33</sup>

Many archivists report that their archives have space and capacity issues, but are also unable or unwilling to report their archives' current volume of physical and electronic holdings in major surveys. Knowing the current volume of material is only the first step to managing archival content. It also must be inventoried and processed (also known as arrangement and description) in order to make it accessible to users.

Several surveys reviewed as part of this research asked respondents to indicate how much of their archive's holdings are cataloged, inventoried, or publicly discoverable.<sup>34</sup> If all archives adhered to American archive guidelines (*Describing Archives: a Content Standard*) directing each collection having some kind of useful description, the answers to these questions would be 100%. The survey responses tell a very different story, which is that most archives still struggle with backlogs (i.e., unprocessed materials).

These persistent gaps remain a major concern given that extensible and minimal archival processing methods to reduce backlogs have existed for almost two decades.<sup>35</sup> The persistence of backlogs is strongly linked to personnel capacity within archives. The issue remains relevant to infrastructure concerns, because having comprehensive collection information in the form of inventories, finding aids, and catalogs is a fundamental aspect of emergency preparedness. In fact, many disaster plans recommend maintaining at least one set of collection records in an offsite location. If an archive has many collections that have not been properly accessioned or processed, not only does this hinder researcher access, it also poses grave risks to accounting for potential loss in a major disaster.

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<sup>33</sup> Institute of Museum and Library Services, "Protecting America's Collections: Results from the Heritage Health Information Survey, February 2019"; Jorgensen, "Sustaining Indigenous Culture: The Structure, Activities, and Needs of Tribal Archives, Libraries, and Museums"; California State Library, "California Cultural Collection Protection Survey Report"; Missouri Historical Records Advisory Board (MHRAB), "2008-2009 Statewide Records Assessment Survey"; Virginia State Historical Records Advisory Board, "SHRAB Preservation Survey."

<sup>34</sup> Skinner, "A\*CENSUS II: Archives Administrators Survey"; Council of State Archivists, "The State of State Records"; Missouri Historical Records Advisory Board (MHRAB), "2008-2009 Statewide Records Assessment Survey"; Virginia State Historical Records Advisory Board, "SHRAB Preservation Survey"; California State Library, "California Cultural Collection Protection Survey Report."

<sup>35</sup> Greene and Meissner, "More Product, Less Process."

Much like the absence of comprehensive data concerning archives building/facilities information, there is also little comprehensive data on how much energy archives are expending on digital collections. An environmental challenge associated with digital preservation is that more energy intensive processes (e.g., having two copies versus three copies, verification of file integrity upon ingest versus at fixed intervals, etc) are associated with higher levels of digital preservation. Since 60% of electricity in the United States is derived from fossil fuels, this means that digital preservation activities performed at high levels are likely to have a larger carbon footprint than lower levels of digital preservation.<sup>36</sup> On the other hand, higher levels of digital preservation may protect content from major disasters such as a power grid failure or major disaster that affects data centers.

## Urgency of emergency preparedness

Emergency preparedness and disaster response is increasingly urgent for archives across the country. With climate change impacting every corner of the United States, there are increasingly severe disasters. According to the NCA:

*In the 1980s, the country experienced, on average, one (inflation-adjusted) billion-dollar disaster every four months. Now, there is one every three weeks, on average. Between 2018 and 2022, the US experienced 89 billion-dollar events. Extreme events cost the US close to \$150 billion each year—a conservative estimate that does not account for loss of life, healthcare-related costs, or damages to ecosystem services.<sup>37</sup>*

It is no longer a question of if archives will experience an emergency or disaster, but when and on what scale. While cultural heritage professions have devoted increasing resources and attention to emergency preparedness thanks to several pivotal events of the last several decades, American archives are still lagging in full preparation for the scale and scope of emergencies associated with climate change.

Typical emergency preparedness practices in cultural heritage tend to focus on singular localized events (e.g., a flood that affects the basement, a wildfire that burns down a building). However, climate change is increasing the incidence of compound events and cascading impacts, where multiple events or impacts occur simultaneously. An example is the 2023 Canadian wildfires which triggered air quality alerts in the Midwest and the Northeast. Archives in these areas may never have considered wildfire risks previously, but air quality alerts may impact how much outside air can be safely introduced via mechanical ventilation systems to maintain occupational safety. Chronic air quality issues may also introduce preservation risks to archival holdings.

Some surveys have asked cultural heritage organizations and archives to report on their emergency preparedness or disaster plan and organizational commitments to updating and practicing those plans. The good news is that archives tend to be better positioned than many other cultural organizations for emergency preparedness. The bad news is that significant gaps remain between having a written plan and having the institutional capacity to implement it.

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<sup>36</sup> US Energy Information Administration, “Frequently Asked Questions (FAQs).”

<sup>37</sup> U.S. Global Change Research Program, “Chapter 1,” 17.

The IMLS Heritage Health survey found that 42% of US collecting institutions have an emergency/disaster plan, and archives were the most likely type of institution (52%) to have a written plan. However, there are major differences within archives based on size: 86% of medium/large archives have some kind of emergency/disaster plan, but only 47% of small archives report the same. Only 24% of US collecting institutions have both a plan and trained staff, however archives were the most likely type of institution to have a written plan and trained staff.<sup>38</sup>

There is no comprehensive national strategy that supports the emergency preparedness needs of all archives. Emergency preparedness often comes down to what local resources are available, the knowledge and commitment of leaders, and the organizational positioning of archives. For example, an archive in a large university library may have access to emergency response officials, while a small community archive might not.

There are uneven resources for archives that need external disaster response support. The Society of American Archivists maintains a National Disaster Recovery Fund for Archives (NDRFA), which makes small grants to archives facing disasters. The Society of Southwest Archivists formed the NDRFA after Hurricane Katrina, and the fund was later transferred to the SAA Foundation. Organizations can apply for grants up to \$5,000 to assist with immediate recovery supplies while the insurance process unfolds.

Other resources like the American Institute for Conservation's (AIC) National Heritage Responders may assist archives with hands-on support during major disasters. Getting the word out about organizations that can provide assistance is crucial since many smaller archives are not networked into large archival associations. On the other hand, these resources are limited and cannot always scale for a major disaster affecting many archives. Organizations that face major disasters often need to navigate FEMA's challenging Public Assistance process.

As the insurance industry increasingly reacts to climate change by raising rates and even pulling out of markets, this will have implications for archives. The art museum sector is already grappling with this issue, as museums in vulnerable coastal areas find their insurance premiums are increasing or their coverage is reduced.<sup>39</sup> Like art museums, the contents within archives are unique. But unlike museums, there is a limited "market" for archives, and this makes financial appraisals of archival collections difficult. Large archives in governments (which are often self-insured) or major universities are likely covered by their parental organization's insurance policies, but small independent community archives, historical societies, and standalone nonprofit archives may face the greatest risk from the fluctuating insurance market.

Existing challenges within the archivist workforce such as reliance on term positions and restricted resources often present barriers to ongoing professional development. Being able to participate in ongoing professional development related to emergency preparedness and

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<sup>38</sup> Institute of Museum and Library Services, "Protecting America's Collections: Results from the Heritage Health Information Survey, February 2019," 28–31.

<sup>39</sup> Ho, "Growing Claims from Climate Change Will Prompt Art Insurance Rate Increases, Experts Report."

disaster response is essential for archivists' capacity to address these issues, especially updating emergency plans to keep up with new approaches to disaster response. Each new major disaster brings new lessons learned in effective disaster response. Early disaster response training for cultural heritage was influenced by events such as the 1966 Florence floods and the 1973 NARA St. Louis National Personnel Records Center fire. More recent disaster response training has incorporated lessons learned from the September 11th terrorist attacks and major hurricanes like Hurricane Katrina, Hurricane Sandy, and Hurricane Maria. Without support for ongoing professional development, archivists may lack the skills and institutional support for updating their disaster plans even as these needs are increasingly urgent.

Emergency preparedness and disaster response networks are groups intended to promote planning for participants prior to an emergency/disaster, and facilitate resources and communications during and after an emergency/disaster. Ideally, these organizations also help build relationships between emergency management officials and cultural heritage professionals. These groups are a vital resource to assist smaller and more vulnerable archives. However, like all professional associations, their success depends disproportionately on a small number of enthusiastic and committed individuals.

The Heritage Emergency National Task Force (HENTF) formed in 1994 and was one of the first major national networks dedicated to coordinating communications and resources between the emergency management and cultural heritage communities.<sup>40</sup> Since 2000, dozens of other similar organizations have formed at the state and local levels. Most of these networks have affiliated under the larger umbrella of the Alliance for Response (AFR), which is currently managed by AIC. The Alliance for Response website currently maintains links to over 30 state and local networks.<sup>41</sup> However, since these organizations are largely self-directed, there is wide variation in their activity levels.

Even as disasters become increasingly frequent and severe, it is hard to assess the amount of damage incurred among US cultural heritage institutions. Since there is not a central reporting mechanism for American archives, there is not a way to quantify cumulative loss each year among archives. Some archives publicly share about disasters when they happen, but many do not. Reporting on disaster losses is key to driving both internal and external support for emergency preparedness and disaster response. One of the major challenges during disasters is coordinating communications: making sure emergency professionals have accurate information, and reducing duplicative reporting burdens on cultural heritage organization staff.

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<sup>40</sup> Cooper and Hagerman, "A Brief History of Emergency Programming at Heritage Preservation."

<sup>41</sup> American Institute for Conservation, "Alliance for Response Networks."

## Phase 3: Collections

### Defining and locating environmental collections

Environmental collections do not neatly fit into disciplinary boundaries. The relatively recent disciplinary demarcation between the sciences, and the arts and humanities, breaks down quickly when examining environmental documentation. Records from humanistic endeavors have also informed scientific breakthroughs and understanding, especially within the context of climate change. The role that archivists play in identifying and selecting records of enduring value (a process known as appraisal) is essential to the preservation and stewardship of environmental collections. A frequently recurring theme across the literature and interviews with archivists and archives users is that most archives already have collections with unrecognized environmental information, meaning American archives have many “accidental” or unexpected environmental collections.

Given the wide range of environmental records and documentation—from minute by minute records created by scientific instrumentation to oral traditions that span centuries—one is confronted with the challenge of identifying and defining types of environmental records. Since records originally created for one purpose can so often be repurposed for understanding environmental and climate science, this makes the work of archivists in determining what records of the past to preserve for a future defined by climate change more difficult than it might appear on the surface.

Archival appraisal is the process by which archivists determine the enduring value of records, and whether those records should be preserved through archival stewardship, versus those that can eventually be destroyed or declined to be accessioned into a particular archival repository. Archivists navigate the appraisal process with the following criteria:

- Provenance (who created the records)
- Function (why were the records created and how were they used by the original creators)
- Legal or organizational mandates to preserve records (often expressed in institutional records retention schedules)

Archives that acquire archival materials from external sources (e.g., a special collections unit in a university library that collects materials from the local community) typically have a collection development policy. Appraisal of archival materials will also determine whether the materials are a good fit according to a collection development policy. To appraise records, archivists must physically interact with the records by examining representative samples, understanding the context in which the records were created, and having knowledge of the value of records.

American archivists have discussed the challenges and importance of appraising and preserving environmental records since the 1950s,<sup>42</sup> however the bulk of this literature began to appear in the 1990s. Some articles have looked into the suitability of documentation strategies for preserving environmental collections. Documentation strategies rose in popularity during the

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<sup>42</sup> Pinkett, “The Forest Service, Trail Blazer in Recordkeeping Methods.”

1970s and 1980s, and are typically cross-institutional projects intended to identify all known extant archival collections about a particular subject, and when possible, encourage the increased preservation, access, and awareness of these collections. Although documentation strategies have declined in popularity since the 1990s, documentation strategy projects still exist within the archives field. A notable example is Project STAND (Student Activism Now Documented), which maintains a comprehensive directory of student activism archives, and continues to work with both archivists, student activists, and other interested parties.<sup>43</sup>

Environmental movement records are a particularly important aspect of environmental archives that remain disparately documented, and likely have the largest potential for increased preservation by archives. Some aspects of environmental movements are well-documented, especially those related to mainstream legacy environmental organizations that have existed for decades. The Bancroft Library at University of California (UC) Berkeley contains the official records of the Sierra Club national office (many local chapter records are held at other repositories across the country), the New York Public Library holds the national records of the Audubon Society, and the Denver Public Library contains many of the records of the Nature Conservancy (though notably, the Nature Conservancy discarded many of its pre-1960s records and what survived was primarily acquired via past presidents).<sup>44</sup>

Compared with legacy national environmental organizations, environmental justice movement organizations are often small, ephemeral, and more likely to depend on volunteers. This means that their records do not have an automatic mechanism for some degree of dissemination or preservation. While the American archival profession has prioritized the collection of social justice and materials from marginalized and oppressed groups, there has not been similar progress made in the preservation of records from environmental justice movement organizations.<sup>45</sup> Furthermore, after reviewing regional finding aid aggregators, it appears that with a few small exceptions of campus student protest collections, few climate movement organizations have their records preserved in public archives.

There appear to be major geographic disparities in the identification and availability of environmental collections. Some of the most well-known environmental collection archives are in the western states, including the Denver Public Library's Conservation Collection, UC Berkeley's Bancroft Library, the UC Riverside Water Resources Collections & Archives, and the Colorado State University Water Resources Archive. When I conducted regional finding aid aggregator searches, it became obvious that even beyond these prominent environmental archives, finding aid aggregators based in the Western states more clearly identified environmental collections in their holding records than finding aid aggregators in states east of the Mississippi River. While this does not necessarily lead to the conclusion that Western archives have more environmental collections (in order to make this type of determination, every archive would need to have every finding aid available online with an appropriate level of

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<sup>43</sup> Project STAND, "About."

<sup>44</sup> Online Archive of California, "Sierra Club Records"; New York Public Library, "National Audubon Society Records"; Denver Public Library, "The Nature Conservancy Records."

<sup>45</sup> Stempler, "The Use and Availability of Environmental Activism Collections in Academic Archives"; Welch, "'Green' Archivism."

description in an aggregator tool), it is noticeable in terms of the visibility of environmental collections within Western archives.

Real and perceived documentation gaps arise when archivists who appraise records fail to recognize their environmental aspects. Reappraisal can help surface previously unrecognized environmental information from collections already preserved by archives. Because of the ubiquity of environmental concerns, both archivists and archives users often point out the unrealized potential of existing collections to support environmental information needs. It is likely that most archives have more environmental collections than they realize, but it takes time and resources to engage in reappraisal and new description projects.<sup>46</sup>

## Use of environmental collections

Like all archives, environmental collections are used in myriad ways by diverse users. While historical research for academic and popular audiences remains an important aspect of archival use, environmental collections are also used by activists to study previous organizing strategies, by journalists to find additional sources to interview, by energy companies to assess previous mining and extractive activities, by safety regulators to determine areas of risk, by policy makers for disaster rebuilding efforts, by the courts to adjudicate water and land rights, and by many others users for many other reasons.

There have been few in-depth studies examining the usage of environmental collections.<sup>47</sup> It is unsurprising that there is relatively little systemic data on users of environmental collections, given that the archives field has relatively few user studies overall.<sup>48</sup> While there is a clear need to conduct more user studies for environmental collections, archivists can work more closely with their existing users to identify local environmental collection needs.

Environmental collections share many of the same challenges of discoverability as other archival collections, but there are also characteristics of environmental collections that complicate their discovery. Many archival collections that were not acquired with a focus on their environmental characteristics often do have environmental information embedded within the records. Surfacing this information is possible, but it takes resources to engage in reappraisal, update legacy descriptions, and make these efforts known to potential users who may have previously concluded that an archive did not have relevant collections.

Other reasons cited by archivists and archives users is that most archivists do not have educational backgrounds in disciplines that focus on environmental concerns.<sup>49</sup> MLIS programs rarely include units on environmental information and literacy. The top undergraduate major reported by archivists to the A\*CENSUS II survey was history (38% of respondents), followed by

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<sup>46</sup> Welch, “‘Green’ Archivism”; Myers and Moe, “Greening the Archive.”

<sup>47</sup> Welch, “‘Green’ Archivism”; Stempler, “The Use and Availability of Environmental Activism Collections in Academic Archives.”

<sup>48</sup> Rhee, “Reflections on Archival User Studies.”

<sup>49</sup> Joint Committee on Archives of Science & Technology (U.S.), Elliott, and Society of American Archivists, *Understanding Progress as Process*; Loewen, “From Human Neglect to Planetary Survival.”

an unspecified “other” (30%), and literature (11.94%). As a result, there is little clarity on whether most archivists have the environmental literacy skills critical to identifying, appraising, describing, and promoting environmental collections.<sup>50</sup> Larger research institutions often have collections that are alienated from their original location of creation. Archivists working with those records may not be aware of the significance of local environmental issues within a collection held far outside its place of origin, and would need to work to develop this type of understanding.

Prior research has shown that there is not clear consensus on user interest in digitized collections. OCLC’s National Finding Aid Network research showed that most users preferred to have access to digital collections, but most were also willing to do in-person research.<sup>51</sup> Some participants expressed preferences for in-person research, believing they would have access to resources that others had not used.<sup>52</sup> Interviews with subject matter experts also demonstrated mixed feelings on digitization.

Perhaps the most perplexing area resulting from subject matter expert interviews are the use rates of environmental collections. Some archivists based at major universities reported they had seen less demand for environmental collections from students, connected to a seeming lack of interest in environmental history. In contrast, other archivists and activists I interviewed noted high demand and usage of environmental collections in their institutional contexts.

What does appear to be consistent across the issue of usage rates/demand for environmental collections is the importance of strong archivist connections to potential donors and communities of users. Archivists mentioned that engaging in highly visible activities to build community relationships often has a snowball effect. As more people in the community understand not just the importance of environmental records, but *others’ interest in them*, this creates a demand for archival records and develops relationships that open the doors to bringing in new collections and users. This is especially important when it comes to the issue of documenting environmental justice movements.

## Environmental justice/environmental movement documentation

The environmental justice movement coalesced in the 1980s as communities of color mobilized against the placement of toxic waste sites in their neighborhoods, along with the publication of major reports that demonstrated the extent of environmental hazards near Black and Latino neighborhoods. This led to an increased recognition of environmental racism, meaning the ways in which Black and Latino communities are more likely to be exposed to toxins and pollution. Environmental justice is the recognition that due to systemic racism and economic inequality, communities of color and working class communities face disproportionate environmental harms. In 1991, the first major American environmental conference dedicated to the concerns of people of color took place in Washington DC.<sup>53</sup>

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<sup>50</sup> Skinner and Hulbert, “A\*CENSUS II, All Archivists Survey Report,” 124–25.

<sup>51</sup> Weber et al., “Summary of Research,” 10.

<sup>52</sup> Weber et al., “User Interviews,” 20.

<sup>53</sup> Berndt, “30th Anniversary.”

Environmental justice organizations are often formed in response to a particular issue. For example, a toxic waste site may be proposed for a lower-income neighborhood, or residents of a predominantly Black or Latino community may notice increasing rates of childhood respiratory issues downwind of a factory or refinery. These organizations may dissolve due to the same organizational challenges that afflict other activist groups such as burnout, they may transition into a long-term organization concerned with ongoing or new issues, they may merge into another organization, or they might disband depending on the final outcomes of an event-focused campaign.

As a result, local environmental justice organizations are highly ephemeral. Organizations may have a lifespan of just a few months or a few years. This ephemerality is not unique to environmental justice organizations, and it is common for social justice movement organizations to pop up and fall away for reasons similar to those in the environmental justice movement. Despite the frequent ephemerality of local environmental justice groups, they play a vitally important role in organizing local residents and directing media and legacy environmental nonprofit attention towards local issues that may otherwise be overlooked.

It is not always clear what an obvious destination should be for the preservation of environmental justice collections. Many environmental justice organizations have relationships that range from friendly to hostile with large institutions. Some environmental justice organizations may distrust placing their archives with a university because its scientists are involved with extractive activities that the organization is protesting against, or it may be reluctant to share its records with an archive closely associated with a government entity since environmental justice organizations may often be plaintiffs in lawsuits involving the government.

It is also unclear to what degree community archives<sup>54</sup> (i.e., those that preserve archives of marginalized communities outside of mainstream archival institutions) might support the work of environmental justice organization materials. There is not a comprehensive public directory of community archives, and very few community archives participate in finding aid aggregators. Therefore, it is difficult to assess the role community archives currently play in stewarding the collections of environmental justice organizations and activists.

Historically formed by local residents who find themselves as accidental activists, the recordkeeping practices of environmental justice organizations often happen outside of a formal organizational system. Within the context of legacy and/or professionalized environmental organizations, there are likely to be defined units with specific functions and staff who produce records within the course of their work. Environmental justice activists in grassroots organizations also produce records within the course of their work, but without the larger apparatus of a formal or professionalized organization, these records are at greater risk of being lost or displaced.

Across the literature and in interviews with subject matter experts, the proverbial “records in the basement of a community elder” issue came up several times. As movement organizations come

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<sup>54</sup> Jules, “Architecting Sustainable Futures,” 4.

and go, individuals often end up with records in their private possession. As a result, the records of many environmental justice organizations may be donated to an archive from an individual affiliated with a long defunct organization, as opposed to coming from an active organization.

Archivist outreach efforts have always been critical to developing strong collections. Outreach takes many forms—to existing and potential collection donors, and past and potential archives users. Outreach activities help archivists develop relationships, identify potential archives, learn more about local organizations, and build public awareness of the importance of archives. Like most activities associated with archives, outreach is a labor-intensive activity, but many examples surfaced from the literature and interviews with subject matter experts show how outreach efforts are essential to preserving environmental collections.

Two major issues seem to be sticking points in navigating challenges with donors of environmental collections: distrust of institutions, and provenance of records. Mainstream archives are often located in large institutions, especially universities and governments, that are frequently at odds with the perspective and mission of environmental justice groups. Environmental justice activists often find themselves in opposition to local, state, and/or federal government over issues of pollution control, toxic chemical exposure, and waste siting decisions.

Some organizations may also be suspicious of universities that may have real or perceived close links to industry, especially universities in areas with significant extractive activity. Archivists based in major research universities are also highly sensitive to the larger fundraising and donor context of the universities they work for. This is a challenge of particular concern to public university-based archives, given those universities' dependence on a mix of funding sources that includes public money and wealthy private donors.

Because most mainstream archives are open to the public, both activists and archivists I interviewed occasionally mentioned issues around access. Educating environmental justice activists about archival practices is important for building trust and transparency, especially for potential donors of collections. The outreach needs and relationship considerations between activists and archivists in the environmental justice context echo other studies of archivists' work with marginalized groups and movement-based organizations. Archivists who have worked with other communities of activists (particularly campus-based and student activist groups) have noted the challenges associated with preserving these archives. A 2008 study showed that nonprofit organizations frequently state a preference for working with archives and archivists that share their viewpoints, and around one in five organizations reported they “would not consider donating their records to any archival institution.”<sup>55</sup> Many archivists are aware of these tensions, and have often stressed that it is important to them that the records are preserved through some means, even if not at their institution.

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<sup>55</sup> McDonald, “Out of the Hollinger Box and into the Streets: Activists, Archives, and Under-Documented Populations,” 62.

# Appendix 1: Methodology

For each phase of research, I prepared an initial research plan for review and approval by Patricia Hswe, Program Officer for Public Knowledge. The following major questions guided each phase of research:

## Phase 1 (People):

- Are there institutional variations in staffing?
- What are likely staffing trends over the next 5-10 years?
- Are there any geographic variations or concerns in staffing?
- What best practices exist for appropriate staffing levels?
- How does staffing impact disaster preparedness?
- Are there any emerging staffing models/workforce strategies that address workforce precarity or resource issues?

## Phase 2 (Infrastructure):

- What baseline information exists about American archives facilities?
- What digital infrastructure do archives need?
- What challenges exist for implementation of sustainable facilities standards?
- Are issues of insurance coverage beginning to impact archives?
- What barriers do archives face with emergency preparedness and disaster recovery?

## Phase 3 (Collections):

- How are archival acquisition and appraisal practices shifting in response to climate change?
- What user needs exist (including research, teaching, advocacy, and activism) related to climate change and environmental history?
- Where are there previous and ongoing climate change and environmental justice documentation efforts? What is well-documented, and where are there gaps?

The primary methodology for each phase was extensive review and analysis of published and informal research for each focus area. I typically began by collecting relevant known literature originating from archival professional associations and journals, and when appropriate, extended citation chaining searches within Google Scholar for relevant literature from other fields (for example, environmental humanities in Phase 3: Collections).

When open data sets were available, I conducted secondary data analysis with simple descriptive statistics. This method was most common in Phase 1 (People), in which many findings drew heavily from the A\*CENSUS II survey. Conducted by the Society of American Archivists and Ithaka S+R, this large open data set is available from the SAA Dataverse repository. The A\*CENSUS II - All Archivists Survey data set consists of responses from 5,699 archivists, and the A\*CENSUS II - Administrators Survey has responses from 746 administrators.<sup>56</sup>

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<sup>56</sup> Society of American Archivists, "A\*CENSUS II Datasets Now Available in the SAA Dataverse."

I supplemented literature review and data analysis with subject matter expert interviews for each phase of the research. I interviewed a total of 26 subject matter experts across the three phases. Interviews typically lasted 30-60 minutes. All subject matter experts received a written invitation with logistical details so they could make an informed decision related to being interviewed. Subject matter experts received a written copy of interview questions prior to the interview to assist in their preparation. They were asked different questions depending on their area of expertise.

All subject matter experts were encouraged to specify how they wished to be identified regarding anonymity and institutional affiliations within the written reports for each phase. Interviews were conducted via Zoom and while they were not recorded, I took extensive written notes. I cleaned up these notes following the interview and sent them to the subject matter expert within two to three business days following the interview for their review and an invitation to make changes.

I held monthly meetings with Patricia Hswe, program director for Public Knowledge to discuss research progress, and contacted Julia Marden (Public Knowledge), Mohamed Haiian Abdirahman (Library and Archives), and Susanne Pichler (Library and Archives) for additional support as needed. Once each phase report draft was completed, I met with the entire Public Knowledge team to discuss the findings and solicit feedback. After revising the report, I then shared the complete written report for each phase with Public Knowledge. This final report was prepared by summarizing major findings from each of the three phase reports, and developing ten recommendations to accompany the summarized findings from the reports.

## Appendix 2: Consultant Information

This project was carried out by Eira Tansey, the founder and manager of [Memory Rising, LLC](#). Memory Rising provides research, consulting, and archival services for cultural and humanities institutions and other organizations. Key areas of expertise include climate change, environmental and labor movements, and Ohio Valley regional history. Memory Rising's clients have included the Council of State Archivists, METRO, the Digital Preservation Outreach & Education Network, the Digital Preservation Coalition, UCLA's California Rare Book School, the Society of Southwestern Archivists, and the Andrew W. Mellon Foundation.

Prior to founding Memory Rising, Eira worked in academic libraries and museums for nearly twenty years. She previously worked as Digital Archivist/Records Manager at the University of Cincinnati from November 2013 to April 2023. As the university's first digital archivist, she was responsible for digital preservation of the university's historic records. She created the university's first General Records Schedule to ensure consistency and compliance of records management across all units of the university, as required by Ohio public records law.

She is a leading international expert on the impacts of climate change on archives, with extensive research, teaching, and community-building experience. She is an instructor for California Rare Book School, where she taught an Archives and Climate Change seminar in 2022 and 2024. Eira's research on archives and climate change has been profiled by [Yale Climate Connections](#), [VICE](#), and [Pacific Standard](#). She has written for a wide variety of archives, history, and environmental policy journals, and is the author of the recent publication [A Green New Deal for Archives](#), which received the 2024 [Waldo Gifford Leland Award](#) for writing of superior excellence and usefulness in the fields of archival history, theory, and practice. Eira is an elected member of the Society of American Archivists Council, the governing body for North America's largest professional association of archivists. She previously served on the Society of American Archivists Committee on Public Policy, and the US National Archives Freedom of Information Act Advisory Committee. Eira lives and works in the Ohio River watershed and is a resident of Cincinnati.

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