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Climate Readiness Task Force

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Final Report of the RBMS Climate Readiness Task Force

Report drafted by the Climate Readiness Task Force of the Rare Books and Manuscripts Section (RBMS) of the Association of College and Research Libraries (ACRL), a division of the American Library Association (ALA)

Submitted to the RBMS Executive Committee on June 3, 2022

Front Matter

Task Force Members List

Members are listed in alphabetical order by last name followed by a recognition of their role on the task force.

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Executive Summary

The RBMS Climate Readiness Task Force began its work in March 2021, dividing work amongst three subcommittees each tasked with investigating one of the following three questions:

1. What is known about the potential impact of climate change on cultural heritage materials?
2. How are cultural heritage organizations beyond RBMS responding to climate change? What is happening in the field broadly?
3. What are known and emerging best practices for mitigating the impact of cultural heritage work on the climate?

Each subcommittee drafted and submitted a report detailing the results of their investigations, which were subsequently workshopped and revised by the full task force who then drafted recommendations based on the reports. The draft reports and recommendations were shared with RBMS membership during a call for comments period (September-November 2021). In early 2022, volunteers from the task force began finalizing the recommendations, drafting our Values and Key Concepts document, and crafting our final report. The final report contains our recommendations (summarized and detailed below), our Values and Key Concepts, and the reports of our subcommittees (including suggested best practices for the areas of Waste, Emissions, and Policy) along with a bibliography and corresponding Zotero library.

Recommendations

The primary recommendation made by the Climate Readiness Task Force is the creation of a standing Climate Readiness Committee. In conducting the investigation framing this report, the task force found that RBMS members would benefit from ongoing opportunities to build relationships and knowledge around issues related to climate change and cultural heritage. A standing committee can create educational opportunities such as workshops and seminars, provide a space for professionals interested in climate change to connect with one another and build networks around specific focus areas such as regional impact, keep track of new developments in research related to cultural heritage and climate change, as well as generate new knowledge on relevant professional practices. The task force also makes recommendations regarding RBMS conferences and values.

Specifically,

- RBMS should create a standing Climate Readiness committee to be charged with:
 - Developing, maintaining, and publicizing open resources such as
 - a Best Practice Guide for mitigating the impact of cultural heritage work on the climate that is scalable based on institutional size and available resources;

- seminars, workshops, and other programming related to the impact of climate change on cultural heritage work;
 - additional resources on sustainability, disaster response, and documentation of climate threats by region; and,
 - a directory of GLAM practitioners engaged in this work locally who are willing to consult with practitioners new to the topic.
- Investigating the development of local networks along different axes: geographical, by material type, by climate regions/similarity of weather patterns, etc. Maintaining a membership that includes individuals from different geographic regions will be important for facilitating the development of local/regional networks.
- Investigating tools for mapping repositories and their potential climate disaster risks (see the RepoData project in the Archival field)
- Investigating potential collaborations with other groups engaged in similar work (the ALA Sustainability Roundtable, ICOMOS, and other GLAM institutions)
- Investigating avenues for policy advocacy on climate issues on behalf of the cultural heritage community. Advocacy can and should occur on multiple levels, from individual repositories to state and national government agencies and should encourage support of the triple bottom line and climate justice.
- RBMS should consider a rotating in-person and virtual conference model (every other or every 3rd year) to reduce the section's emissions. At in-person conferences, RBMS should continue the practices developed at the 2019 conference to reduce climate impact, and should continue to deliberately improve practices in this regard. A Climate Readiness committee could advise conference planning teams on these issues.
- RBMS should draft a values statement regarding climate change and sustainability. The Values and Key Concepts section of this report could provide a foundation for such a statement.

Summary Results of Investigation

Question 1: What is known about the potential impact of climate change on cultural heritage materials?

Section 1 argues that cultural heritage communities need to become leaders in both mitigating and adapting to climate change. To understand what mitigation and adaptation processes are useful and necessary, it is first important to understand the impact that climate change will have on the specific field of cultural heritage, a niche perspective not often studied explicitly. This is a complicated question affecting many areas influencing cultural heritage materials and the necessary work to steward them and that is interconnected with external agencies. Additionally, it is clear from the literature that no one answer will address the needs of all circumstances and every institution will need to assess how they are individually affected by climate change to devise strategies that fit their requirements. This section examines that impact with a holistic view of the cultural heritage profession, interrogating how climate change affects the physical

collections themselves, the geography and facilities in which they are housed, and the people who steward and access them. It also reviews the impact that the cultural heritage profession has on climate change in terms of resource creation, daily activities, and stewardship of information critical to addressing climate change.

Question 2: How are cultural heritage organizations beyond RBMS responding to climate change? What is happening in the field broadly?

Section 2 provides an excellent resource for those who want to know how various organizations are addressing climate change. These efforts offer potential models for RBMS to follow and suggest potential points of collaboration between RBMS and other organizations within the library, museum, and archives communities, and beyond. The report is divided into three lists of other organizations addressing climate change: 1) Cultural heritage organizations within the US, 2) Global context, and 3) Efforts within the US cultural heritage community that are not necessarily based within professional organizations. Appendix A lists other efforts investigated by the task force but deemed non-relevant for the purposes of this report.

Question 3: What are known and emerging best practices for mitigating the impact of cultural heritage work on the climate?

The task force was unable to find any written and codified examples of best practices in the current, available literature. Instead, the group identified three main Categories of Impact—Waste, Emissions, and Policy—which are contextualized before offering suggested best practices, which address mitigation and adaptation to climate change at the individual, departmental, institutional, political, and cultural levels.

Values and Key Concepts

As members of RBMS and writers of this report, we hope to ground this document in the following values.

- We are for worker and labor power, reuse of resources, collaboration, community, slowing down, and centering the future of our planet and its ecosystems in our work.
- We are against disposability, productivity culture, bureaucratic “solutions” that do not center the future of our planet and our communities, and all forms of exceptionalism (US, Western, humanoid, etc.).

These are the values that we hold in our response to climate change, which we understand to be a constant catastrophe impacting cultural heritage workers, collections, and institutions in a variety of ways which this report attempts to describe.

What do we mean by this for / against framework? With this framework, we hope to make clear both our understanding of the current landscape we work, organize, and build community in and the visions we hold of how our world could be. We cannot remove the presence of disposability, exceptionalism, and other harmful forces from the world overnight. We are often deeply entrenched in those systems, even as we work to fight against them. At the same time, a vital part of beginning to undo these systems is naming their alternatives and seeing how else the world can operate. When we use the for / against framework, we hope to make clear our commitment to dismantling harmful systems and building sustainable alternatives simultaneously. We strive to show our understanding of the world as it exists now and to propose the alternatives we want to endorse.¹

The above values are inherently anti-capitalist. The relationship between unbridled capitalism and the crisis of climate change is well-documented, and mitigation strategies born of capitalism will not help to solve a problem of its own making.² We recognize that cultural heritage institutions cannot unilaterally transform the political economy in which they operate, but we express these criticisms of capitalism in order to encourage practitioners to look beyond simple vendor solutions when considering how to respond to climate change. Instead, we hope to work toward solutions guided by the concepts of slow librarianship and the triple bottom line.

Meredith Farkas defines **slow librarianship** as “an antiracist, responsive, and values-driven practice that stands in opposition to neoliberal values.”³ While the inclusion of a word like slow may seem antithetical in defining an emergency response tactic, reasoned, thoughtful and inclusive responses are essential to building the road to a sustainable future.

¹ Our thinking about this framework was inspired by the recorded discussion of the “Two Sides of Justice” curriculum: *Two Sides of Justice with Santera Matthews and Mariame Kaba*. Project NIA, November 19, 2020, video, 1:41:43, <https://www.youtube.com/watch?v=kDc-Sif9YOc>.

² See Christopher Wright and Daniel Nyberg, *Climate Change, Capitalism, and Corporations: Processes of Creative Self-Destruction* (Cambridge, UK: Cambridge University Press, 2015) for an analysis of how capitalism and corporations continue to drive the climate crisis.

³ Meredith Farkas, “Slow life, slow librarianship,” *Information Wants To Be Free* (blog), September 8, 2021, <https://meredith.wolfwater.com/wordpress/2021/09/08/slow-life-slow-librarianship/>.

Fast is what got us here; slow librarianship recognizes that, and proposes an alternative way out. We also look to concepts like the triple bottom line to challenge traditional responses to climate change. The **triple bottom line** is in contrast to the traditional, singular, bottom line of economic profit.⁴ It encourages institutions to consider environmental sustainability and social responsibility in addition to economic sustainability as a three-pronged measure of success.

Keeping the above values and concepts in mind, this report encourages a “deliberate restraint of expansion,” by which we mean a move away from a culture of novelty and constant expansion. New buildings, new collections, new hardware, new positions, new responsibilities—all of these things have their place. But we encourage thoughtful consideration and strategic re-use. Can recycling and renovating be incentivized? Can we prioritize community connections over international reputation? Can we make workplaces appealing enough that employees want to stay, keeping valuable institutional/local knowledge in place? Can we applaud maintenance as much (or more than) we celebrate innovation? Libraries are located within systems that have been created and molded by capitalism. Rare books and archives are part of multiple systems of power and privilege, including reputation laundering. As individuals, it is difficult to extricate ourselves from a culture of individualism and consumption; it is also difficult for institutions. But this is exactly what is needed at this critical juncture. Otherwise, our practices will continue to contribute to climate change, our institutions will remain unprepared for climate crisis, our collections will be damaged and destroyed by climate catastrophe, and our communities will splinter as the crisis grows.

Climate change is an already occurring emergency, which will certainly worsen. Given that, the key recommendation of the Climate Readiness Task Force (as noted above) is the formation of a standing Climate Readiness Committee within RBMS. As the shape of the problem changes and grows, so, too, must our response. We offer this report as an important first step.

⁴ Alex Chamberlain, “Sustainability Management System: The Triple Bottom Line,” ERA Environmental Management Solutions, accessed April 13, 2022, <https://www.era-environmental.com/blog/sustainability-management-triple-bottom-line>.

Section 1

What is known about the potential impact of climate change on cultural heritage materials?

Mitigation and Adaptation

The Intergovernmental Panel on Climate Change (IPCC) report frames the response to climate change as a mix of *mitigation* and *adaptation*.⁵ Mitigation represents the reduction of greenhouse gases, whereas adaptation consists of adjustment to changes in climate brought by those emissions. Cultural heritage institutions will need to be leaders in both these strategies, finding ways to reduce or eliminate emissions while managing their responsibilities to cultural heritage collections. In practice, there will be overlap between these two strategies, but there may also be some tension as well. Stewards of cultural heritage repositories and institutions must also make careful—and often quick—decisions about how to care for their collections, which collections to prioritize, and how to balance collection growth and digital initiatives with uncertain future consequences. On a more fundamental level, they must also begin rethinking the principles of archival and curatorial practice with a more proactive focus on strategic disaster planning and an uncertain future. As the literature shows, the cultural heritage profession's multimodal relation to people, collections, geography, and scholarship means a multitude of considerations are at hand.

In order to understand what mitigation and adaptation processes are useful and necessary, it is first important to understand the impact that climate change will have on the specific field of cultural heritage (a niche perspective that has yet to be studied in depth). This is a complicated question that affects many areas that influence cultural heritage materials and the necessary work to steward them, and which are interconnected with external agencies. Additionally, it is clear from the literature that no one answer will address the needs of all circumstances, and every institution will need to assess how they are individually affected by climate change to devise strategies that fit their requirements. Section 1 explores the impact of climate change with a holistic view of the cultural heritage profession, examining how climate change affects the physical collections themselves, the geography and facilities in which they are housed, and the people who steward and access them. It also reviews the impact that the cultural heritage profession has on climate change in terms of resource creation, daily activities,

⁵ Ove Hoegh-Guldberg, Daniela Jacob, and Michael Taylor, "Impacts of 1.5°C of Global Warming on Natural and Human Systems" in *IPCC, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*, eds. Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield. (IPCC, 2019), https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf.

and stewardship of information critical to addressing climate change. This comprehensive exploration will help cultural institutions consider all the areas in which climate change impacts and is impacted by their circumstances, and what areas to prioritize for mitigation and adaptation based on the most urgent impacts they face.

Impact of climate change on collections and their stewardship

Collections: Physical effects on materials

Climate change can affect the materials held by cultural heritage institutions in disparate ways—both in disaster situations and everyday conditions. Catastrophic events such as fires and floods increasingly threaten our cultural heritage materials. Poor disaster planning fails to take the scale of these events into consideration and recovery efforts are often coordinated without any prior planning. Four examples from the past two decades illustrate these physical effects.

In 2017, the Zoetrope film archives in Napa and Sonoma counties were forced to move their most important archival materials to temporary storage when catastrophic wildfires threatened their property.⁶ Transportation, cataloging methods, and prioritization of materials to be transferred were done on the fly and archivists did not know how long materials might have to be held in their temporary storage locations (a wine cellar and an airport hangar).⁷

In the first few weeks after Hurricane Maria in 2017, cultural heritage workers in Puerto Rico were unable to assess the magnitude of the damage to cultural heritage materials since they were also in “complete survival mode” without electricity, communications, and essentials such as clean drinking water.⁸ The damage on the island made travel treacherous and there was no directory of all the locations where cultural heritage materials were held.⁹ Recovery efforts were further hampered by the lack of funds available to rebuild and the bureaucratic processes of approval necessary to begin rebuilding.¹⁰

During the aftermath of Hurricane Sandy in 2012, the archives of the non-profit Eyebeam, with holdings representing 15 years of experimental art and technology, were damaged by floodwaters.¹¹ Formats such as DVDs, hard drives, and tapes were compromised

⁶ James Mockoski and Courtney Garcia, “Under threat: One archive’s tale from the 2017 Napa and Sonoma county fires,” *The Moving Image* 18, no. 1, (Spring 2018): 67–75, <https://doi.org/10.5749/movingimage.18.1.0067>.

⁷ Mockoski and Garcia, “Under threat,” 67–68.

⁸ Amye McCarther, “Archives at the Intersection of Postcolonialism and Climate Change,” *Medium*, January 30, 2019, <https://medium.com/metropolitan-archivist/archives-at-the-intersection-of-postcolonialism-and-climate-change-bcbcc800b1f5>.

⁹ McCarther, “Archives at the Intersection.”

¹⁰ McCarther, “Archives at the Intersection.”

¹¹ Kyle Chayka, “Hurricane Sandy Highlights the Problems of Digital Archives,” *Hyperallergic*, November 20, 2012, <https://hyperallergic.com/60598/eyebeam-hurricane-sandy-flooding/>.

by the salt and chemical content of the floodwater.¹² The physical force of the water itself had also damaged materials.¹³ The institution was not prepared for the level of damage to its archives and relied on the good fortune of having available regional volunteer archivists to assist in the recovery efforts.¹⁴

In 2005, a total of 700,000 of Tulane University's library and archive materials were under water for "about three weeks" after Hurricane Katrina because only emergency workers were allowed in the city after the disaster.¹⁵ While most archival materials could be salvaged, microfilm and microfiche holdings were largely destroyed.¹⁶ The institution had a disaster response plan in place before Katrina but it had not considered what was to be done in the aftermath.¹⁷ Recovery was an enormous undertaking that included applying for funding, transporting materials to and from expert facilities, and storage planning.¹⁸

Climate change increases the likelihood of disasters that previously occurred 'once in a lifetime.' These large-scale disasters have the most intense impact on special collections and make planning for them difficult. Disaster planning may need to adjust accordingly and may require preparing multiple plans to cover situations from the typical burst pipe scenario to extreme weather-related events such as a devastating hurricane and subsequent flooding.

Even in the absence of catastrophic events, climate change imperils our cultural heritage materials. Our current understanding of material degradation is not sufficient to address the threats to our cultural heritage posed by an extreme and unstable climate.¹⁹ Cultural heritage scholarship has focused on the effects of climate change on outdoor cultural heritage but a greater understanding of how climate change affects indoor conditions is needed.²⁰ For example, not all institutions are aware that given a stable dew point (the temperature at which air cannot hold all the moisture in it and condensation occurs), the humidity will actually rise when the temperature drops. Therefore, lowering the temperature of the storage space without a corresponding removal of moisture in the air will negatively affect materials.²¹ It should be noted that indoor climate control is dependent upon a stable, reliable power grid, which is threatened by the effects of climate change. Even with mechanical climate controls, our indoor environments are not exempt from effects of the outdoor environment, especially in terms of

¹² Chayka, "Hurricane Sandy Highlights."

¹³ Jae Minard, "Recovering Eyebeam's Archive," *Vimeo*, 2012, video, 4:07, <https://vimeo.com/53849333>.

¹⁴ Chayka, "Hurricane Sandy Highlights."

¹⁵ Elisa F. Topper, "After Hurricane Katrina: The Tulane Recovery Project," *New Library World* 112, no. 1/2 (2011): 46, <https://doi.org/10.1108/03074801111100445>.

¹⁶ Topper, "After Hurricane Katrina," 46.

¹⁷ Topper, "After Hurricane Katrina," 46.

¹⁸ Topper, "After Hurricane Katrina," 47.

¹⁹ C. Sabbioni et al., *Vulnerability of cultural heritage to climate change* (Strasbourg: Council of Europe, November 20, 2008), 3,

https://www.coe.int/t/dg4/majorhazards/ressources/Apcat2008/2008_44_culturalHeritage_EN.pdf

²⁰ Sabbioni et al., *Vulnerability of cultural heritage*, 20.

²¹ Gregor Trinkaus-Randall, James Reilly, and Patricia Ford, "The Massachusetts Experiment: The Role of the Environment in Collection Preservation," *The American Archivist* 77, no. 1 (2014), 139, <https://doi.org/10.17723/aarc.77.1.kk006ng471327l5j>.

fluctuations in relative humidity.²² Temperature and relative humidity are factors in degradation which “are always present, have the broadest effect on the largest number of items in collections, and act as enablers (or inhibitors) of damage caused by other factors such as light or pollutants.”²³ Temperature and relative humidity influence chemical, mechanical, biological, and corrosive types of material degradation.²⁴ These are two factors widely affected by climate change which warms the planet, causing higher temperatures leading to increased evaporation of water and higher humidity in the air.

Geography: Buildings/facilities

In addition to the dangers posed by climate change to the materials we steward, the spaces where we store those materials face an existential threat. Collection storage spaces, both climate controlled and uncontrolled, and the larger buildings and structures that house collections are at great risk from multiple climate change impacts. Temperature change, precipitation change, sea level rise, and increased greenhouse gas emissions are major, known sources of future—and, in some cases, current—damage to buildings and facilities where cultural heritage materials are supposed to be safely stored.²⁵ Many special collections are stored in historic buildings. As Mínguez García points out,

[h]istoric environments suffer more from climate instability. For example, changes in rainfall patterns and temperatures that do not affect modern structures may cause serious damage to buried or exposed archaeological sites, and historic buildings and museum collections are usually more affected by relative humidity, as old drainage systems are by increasing rainfall.²⁶

Whether housed in new buildings or old, a 2018 study of 1,232 archival repositories across the United States found that “most archival locations are currently or could be at risk of exposure to at least one type of climate change effect or climate-triggered phenomena by 2100”.²⁷

Buildings and facilities in areas most vulnerable to climate change face the additional challenge of access after a disaster. While having a disaster recovery plan is standard best practice in managing cultural heritage collections, the large-scale emergencies created by climate change highlight both the importance and the futility of just such plans. Accordingly, the type of disaster recovery plan that grapples with climate change must address damage to an entire building or facility while also taking into account damage to the surrounding environs. As Topper writes, “[t]he [Tulane] plan outlined an emergency team and specific action steps in case of an emergency. The plan also included post event procedures for staff to follow and recovery methods were discussed in detail. Yet when Katrina hit New Orleans, very little in the plan could

²² Trinkaus-Randall, Reilly, and Ford, “The Massachusetts Experiment,” 144.

²³ Trinkaus-Randall, Reilly, and Ford, “The Massachusetts Experiment,” 136.

²⁴ Trinkaus-Randall, Reilly, and Ford, “The Massachusetts Experiment,” 136.

²⁵ Sabbioni et al., *Vulnerability of cultural heritage*, 10-11.

²⁶ Bárbara Mínguez García, “Resilient Cultural Heritage for a Future of Climate Change,” *Journal of International Affairs* 73, no. 1 (Fall 2019/Winter 2020): 104-105, <https://www.jstor.org/stable/26872781>.

²⁷ T. Mazurczyk et al., “American archives and climate change: Risks and adaptation,” *Climate Risk Management* 20, (2018): 120. <https://doi.org/10.1016/j.crm.2018.03.005>.

be used because of the enormity of the disaster.”²⁸ As climate change becomes an ever-greater threat to an increasing number of geographic places in the United States (not to mention globally), more and more cultural heritage repositories will find themselves grappling with these sorts of disasters.²⁹ A growing body of literature is even beginning to suggest that, in some cases, “[s]ome institutions may need to give serious consideration to moving entire facilities to less vulnerable locations because the risk of substantial collection loss or damage is too high.”³⁰

People: Workers/community

Beyond the effects of climate change on collections and buildings, we must also consider the direct and indirect impacts on the people who work in and use library and archival collections. While the predicted consequences of climate change carry some degree of uncertainty, experts agree it is reasonable to expect disruptions to social, economic, and political systems.³¹ ³² From individual job loss to relocation of collections and operations to loss of cultural memory and identity, the expected impacts on the cultural heritage sector are both specific and global.³³ ³⁴ ³⁵ ³⁶

At the global level, extreme weather and sea level rise will impact transportation and telecommunication infrastructures with direct and indirect impacts on library and archive operations, services, and supply chains.³⁷ ³⁸ Interconnected impacts of population migration, increased urbanization, and decreased living standards, especially in the regions most vulnerable to climate disasters, will exacerbate disruptions to infrastructure.³⁹ ⁴⁰ We can expect these disruptions to alter the ways librarians and archivists work with each other, collections, users, and donors. As Pendergrass et al. note, “Cultural heritage organizations (CHOs) rely on a stable society to fulfill their missions: from researchers who make use of collections, to funding

²⁸ Topper, “After Hurricane Katrina,” 46.

²⁹ Eira Tansey, “Archival Adaptation to Climate Change,” *Sustainability: Science, Practice and Policy* 11, no. 2 (Fall 2015): 45–56. <https://doi.org/10.1080/15487733.2015.11908146>.

³⁰ Mazurczyk et al., “American archives and climate change,” 121.

³¹ Jennifer Howard-Grenville et al., “From the Editors: Climate Change and Management,” *The Academy of Management Journal* 57, no. 3 (June 2014): 615–623, <https://doi.org/10.5465/amj.2014.4003>.

³² Aromar Revi et al., “Urban Areas” in *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (New York: Cambridge University Press, 2014), https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-PartA_FINAL.pdf.

³³ McCarther, “Archives at the Intersection.”

³⁴ Sabbioni et al., *Vulnerability of cultural heritage*, 10.

³⁵ Tansey, “Archival Adaptation to Climate Change.”

³⁶ Sophie Yeo, “How to Protect Rare Books and Manuscripts From Climate Change,” *Pacific Standard*, May 14, 2018, <https://psmag.com/environment/saving-our-archives-from-climate-change>.

³⁷ Howard-Grenville et al., “From the Editors: Climate Change and Management,” 618, 621.

³⁸ Revi et al., “Urban Areas,” 538-40, 556-9.

³⁹ Rohit Jigyasu, “Managing Cultural Heritage in the Face of Climate Change,” *Journal of International Affairs* 73, no. 1 (Fall 2019/Winter 2020): 87–100, <https://www.jstor.org/stable/26872780>.

⁴⁰ Revi et al., “Urban Areas,” 551-2, 556-7, 568.

sources, to collecting activities, CHOs' success is built on the social and physical constructions of a stable society. Climate change threatens that stability."⁴¹

At the organizational level, severe weather has already impacted library and archive staff from loss of jobs after Hurricane Sandy and Hurricane Katrina to work site relocation away from collections after Hurricane Maria.^{42 43 44} In the future, necessary investments in response and adaptation to climate change vulnerabilities will increasingly come from institutional funds, impacting budgets and bringing the risk of staff layoffs.⁴⁵

In situations where the collections and workplace may be unaffected, the staff may not be so fortunate. After Hurricane Katrina, as Tansey notes, "[e]ven when collections survived relatively unscathed, large numbers of library staff suffered great losses to their homes, health, and sometimes family and friends' lives."⁴⁶ We should also assume and prepare for similar losses and stressors in the wider library and archive community of collection users and donors.

Impact of our profession on climate change

Creation of resources: analog and digital

As libraries and other cultural heritage organizations assess climate change threats, they also must assess their own contributions to environmental instability. While not every library is directly involved in publishing, they are intrinsically connected with the industry as one of the largest purchasers and subscribers of produced content. The creation of resources impacts our carbon footprint whether we consider print or digital formats. Worldwide journal publishing produces over 13 million tons of CO₂ emissions, and the U.S. alone produces over 12 million tons of CO₂ out of the book industry.⁴⁷ This carbon footprint data typically includes CO₂ created by paper production and printing, transportation of books, landfill disposal of returned titles, and paper and energy use by retailers and publishers, combined with carbon storage lost when trees are harvested.⁴⁸

While there is a need for more research on the carbon footprint for digital knowledge products, production and transportation costs and impacts are significantly less than for print resources. New research points to a growing concern in energy use for digital consumption. Exponential growth in electronic and born digital collections, as well as mass digitization of

⁴¹ Keith L. Pendergrass, Walker Sampson, Tim Walsh, and Laura Alagna, "Toward Environmentally Sustainable Digital Preservation," *The American Archivist* 82, no. 1 (March 2019): p. 166, <https://doi.org/10.17723/0360-9081-82.1.165>.

⁴² McCarther, "Archives at the Intersection."

⁴³ Tansey, "Archival Adaptation to Climate Change."

⁴⁴ Yeo, "How to Protect Rare Books and Manuscripts From Climate Change."

⁴⁵ Revi et al., "Urban Areas," 563-75.

⁴⁶ Tansey, "Archival Adaptation to Climate Change," 7.

⁴⁷ Gobinda Chowdhury, "Carbon Footprint of the Knowledge Sector: What's the Future?," *Journal of Documentation* 66, no. 6 (October 19, 2010): 934-946, <https://doi.org/10.1108/00220411011087878>.

⁴⁸ Chowdhury, "Carbon Footprint," 938.

audiovisual and analog resources, means we are using technological infrastructure that “remains dependent on dirty energy.”⁴⁹ Technological infrastructure includes devices, data centers, and networking. “Dirty energy,” or that produced by fossil fuels, represents nearly eighty percent of global electricity. The United Nations reports that the energy supply sector (electricity, heat, and other energy) is the largest contributor to global greenhouse gas emissions.⁵⁰ The publishing industry’s shift to digital production and consumption is an environmental impact shift from traditional issues with print production to a growing need for more energy and fuels. When scrutinizing their impact on climate change, cultural heritage institutions may need to consider their patronage of this unsustainable industry and reevaluate traditional models of content consumption.

Regular activities: collecting, preserving, and storing

There is a growing body of literature within the archival community about adjusting regular operations to combat the effects of climate change and to develop more sustainable practices. This theme has yet to be treated in depth among the rare books and manuscript communities based on available literature, but we believe that many of the adjustments to practice recommended in the archival literature can be applied to areas of rare materials care and take that as the basis for this subsection.

As Winn points out in her 2019 article, “[w]estern archivry operates from the implicit and explicit assumptions of futurity.”⁵¹ Future use and future users define and shape the core values of the profession and are a driving force behind key archival practices of acquisition, appraisal, preservation, description, and access.⁵² Yet, current climate risks and impending exhaustion of natural resources ought to challenge our profession’s assumptions of such uninterrupted continuity and future certainty. Scaled globally, such “existential uncertainties” should not only lead to a deep, critical reassessment of the profession’s core values, but also to a reconsideration of our current approaches to collecting and preserving cultural heritage materials, which continue to rely on the assumption of continued access to and unbridled exploitation of infinite natural and human resources.⁵³

Despite these uncertainties, the unchecked and unrestrained acquisition of physical and digital collections continues to grow, along with the requisite demands for climate controlled storage. Because of that growth, “[d]emand for archivists is expected to increase, as public and private organizations require that more volumes of records and information be organized and made

⁴⁹ Benjamin M. Goldman, “It’s Not Easy Being Green(e): Digital Preservation in the Age of Climate Change,” (June 13, 2018): [282], <https://scholarsphere.psu.edu/resources/381e68bf-c199-4786-ae61-671aede4e041>.

⁵⁰ United Nations, “Facts and Figures,” United Nations Act Now, accessed May 6, 2022. <https://www.un.org/en/actnow/facts-and-figures>.

⁵¹ Samantha Winn, “Dying Well In the Anthropocene: On the End of Archivists,” *Journal of Critical Library and Information Studies* 3, no. 1 (2020): 3, <https://doi.org/10.24242/jclis.v3i1.107>.

⁵² Winn, “Dying Well,” 3.

⁵³ Winn, “Dying Well,” 4.

accessible.”⁵⁴ Even if digital archives have less of a carbon footprint (debated, as noted above), that cheaper storage could result in far larger holdings, thus negating that advantage. Digital preservation and storage is an inevitable and growing regular activity for many cultural heritage institutions. Our task force did not have the time and capacity to treat this area in depth and hope that a standing committee can take up this work. We recommend Trevor Owens’ book *The Theory and Craft of Digital Preservation* and Pendergrass et al.’s article “Toward Environmentally Sustainable Digital Preservation” as a starting point.

While minimal in comparison to other industries, archival practices do nevertheless leave a significant carbon footprint along with its interconnected global consequences: environmental degradation, labor abuses, resource scarcity, and exacerbated class and racial divides.⁵⁵ According to the U.S. Energy Information Administration, buildings used for archival storage can use between 100,000 and 200,000 BTUs per square foot per year to maintain their climate, depending on a number of factors including the year the buildings were constructed (newer buildings will be more energy efficient). For example, a 10,000 square-foot storage facility of the National Archives of the Presbyterian Church (USA) gives off approximately 36,800kg of CO₂ per year, which is roughly equivalent to the CO₂ emissions produced by eight average US drivers over the course of a year.⁵⁶

Information: data in libraries affecting study of climate change

There is one last impact to discuss: the climatological information contained in cultural heritage materials. Libraries and archives hold materials which are useful in understanding and responding to climate change; these resources both impact and are impacted by climate change. A common theme in the relevant literature is the need for further research to better understand the effects of climate change and to develop models to predict its outcomes.^{57 58 59 60} Such research will likely be made accessible through libraries. Historical data of the natural world, preserved in archival and printed material, provide critical baselines for climate study. These resources may record weather, animal populations, plant life, and other observations that can be used to track patterns over time. One well-known example is the Old Weather project’s⁶¹ use of ships’ logbooks to track historical weather and ice conditions to calculate variations as

⁵⁴ Bureau of Labor Statistics, U.S. Department of Labor, “Archivists, Curators, and Museum Workers,” in *Occupational Outlook Handbook*, accessed June 2021, <https://www.bls.gov/ooh/education-training-and-library/curators-museum-technicians-and-conservators.htm>.

⁵⁵ Edgardo Civallero and Sara Plaza, “Libraries, sustainability and degrowth *Progressive Librarian* 45 (Winter 2016/2017): 20-45, <http://www.progressivelibrariansguild.org/PL/PL45/020.pdf>.

⁵⁶ David Staniunas, “Our Carbon Footprint in the Archives,” *Presbyterian Historical Society*, September 9, 2019, <https://www.history.pcusa.org/blog/2019/09/our-carbon-footprint-archives>.

⁵⁷ Sandra Fatorić and Erin Seekamp, “Are cultural heritage and resources threatened by climate change? A systematic literature review,” *Climatic Change* 142, (2017): 227–254. <https://doi.org/10.1007/s10584-017-1929-9>.

⁵⁸ Sabbioni et al., *Vulnerability of cultural heritage*.

⁵⁹ Chowdhury, “Carbon Footprint.”

⁶⁰ James Baker et al., “Digital Humanities and the Climate Crisis,” *Zenodo*, April 30, 2021, <https://doi.org/10.5281/zenodo.4729844>.

⁶¹ Old Weather, launched in October 2010, accessed February 23, 2022, <https://www.oldweather.org/>.

they relate to current-day environments. A clear takeaway in the fight against climate change is that it must involve local communities and grassroots engagement. Libraries and archives may find themselves to be crucial in the effort to raise local awareness and participation, both as information stewards and community spaces.

In this context, there is a balancing act that must be taken into consideration. Institutions need to reconsider information value in terms of climate change, both in what needs to be accessible in order to study it and what needs to be deaccessioned in order to create more sustainable practices to address it. As observed earlier, cultural heritage workers need an awareness that they cannot save everything⁶² and that managing the scale of collections, even digital ones, is a sustainability strategy that cuts down on space and resources.⁶³ On the other hand, libraries need to ensure important information remains accessible. This approach is particularly important on the subject of climate change research; some of the resources may be considered antiquated (such as natural history) or politically charged. Upon the consolidation of several Canadian Department of Fisheries and Oceans libraries in 2013, historical environmental data that was not accessioned by the remaining libraries was destroyed in what some scientists believed was a politically motivated attack on climate research.⁶⁴ Whether or not that was the case then, one quote from biologist Jeff Hutchings is prescient to the current attitude affecting many cultural institutions: “there is a group of people who don’t know how to deal with science and evidence. They see it as a problem and the best way to deal with it is to cut it off at the knees and make it ineffective.”⁶⁵ Similarly, materials such as out-of-date almanacs could become a target of weeding but actually contain historical weather data that could be significant to climate research. To steward our collections through our changing climate, we must reconsider the value of the materials to ongoing climate research and anticipate the research needs of future climate scientists, while also implementing sustainable accessioning and deaccessioning praxes.

Recognizing impacts of climate change

When considering the impact of climate change, it must be understood as a two-way street: one where we impact and are also impacted by this global emergency. Recognizing these repercussions is the first step to addressing and responding to climate change. Cultural heritage institutions such as libraries, archives, and historical associations provide critical evidence for our understanding of climate change and are community hubs with the potential to lead adaptation and mitigation efforts. In order to develop that role, these institutions will themselves need to adapt to an uncertain future in which they responsibly maintain records, cultural practices, artifacts, and historical sites while striving to mitigate their own contributions to carbon emissions.

⁶² Garcia, “Resilient cultural heritage,” 113.

⁶³ Goldman, “It’s Not Easy Being Green(e),” 285-286.

⁶⁴ Andrew Nikiforuk, “What’s Driving Chaotic Dismantling of Canada’s Science Libraries?,” *The Tyee*, December 23, 2013, <http://thetyee.ca/News/2013/12/23/Canadian-Science-Libraries/>.

⁶⁵ Nikiforuk, “What’s Driving Chaotic Dismantling.”

As we have seen with past events and emergencies, not all contingencies can be anticipated. Still, understanding and accepting the disparate ways in which climate change threatens an organization is essential to begin to prepare and address it. Depending on the specific threats to individual institutions and collections, it will be incumbent upon each organization to become more proactive in their planning for disasters and degraded environmental conditions.

Section 2

How are cultural heritage organizations beyond RBMS responding to climate change? What is happening in the field broadly?

Members of Subcommittee Two compiled the following list from an initial review of 29 national and international organizations and/or resources. Many cultural heritage organizations are actively developing climate resources and this section will likely become out-of-date quickly for that reason. A standing committee within RBMS could be responsible for maintaining an active list of resources of this nature.

Cultural Heritage Organizations Addressing Climate Change

Listed in alphabetical order, the professional bodies below have made or are making an effort to address the effects of climate change on cultural heritage.

1. The American Alliance of Museums, Environment & Climate Network (formerly PIC Green Professional Network)

The [AAM Environment & Climate Network](http://www2.aam-us.org/resources/professional-networks/pic-green-network) works to “advance and celebrate environmental stewardship and aspire to help museums be green in every aspect of their operations and programs.”⁶⁶ The 2013 *Summit on Sustainability Standards in Museums* produced a [white paper](http://www2.aam-us.org/docs/default-source/professional-networks/picgreenwhitepaperfinal.pdf)⁶⁷ focused on museum building renovation and environmental certification programs, which could be useful for institutions undergoing renovations or building new facilities. No “best practices” were prescribed, but rather pros and cons of different approaches are offered, with some essential points that should be adopted by all museums. Diversity of collections and institutions, as well as the museum’s local and global communities were taken into consideration in the drafting of these approaches. Of note is the example section of approaches taken and lessons learned in construction and renovation. While the report is nearing being entirely out of date, the approach is certainly one that could easily be adopted by RBMS.

⁶⁶ “PIC Green Network,” American Alliance of Museums, accessed June 13, 2021, <http://www2.aam-us.org/resources/professional-networks/pic-green-network>.

⁶⁷ American Alliance of Museums and the PIC Green Professional Network, “Museums, Environmental Sustainability and Our Future: A Call to Action from the Summit on Sustainability Standards in Museums,” ed. Ellen Hirzy (Baltimore, MD, 2013), <http://www2.aam-us.org/docs/default-source/professional-networks/picgreenwhitepaperfinal.pdf>.

2. American Association for State and Local History (AASLH): Task Force on Environmental Sustainability and Climate⁶⁸

Because this organization is mostly professionals interested in history, their focus is in line with that of special collections professionals. Both groups are interested in preserving history in all its forms and making sure that historical artifacts, materials, and cultural sites will be available for the future. Since climate change threatens many of those sources, it is in the best interest of history professionals to see that damage is prevented. This task force was created to examine available approaches to mitigating the damage and providing a “road map” to guide area history agencies and individuals toward a best-practice scenario for their own particular situation.

3. American Library Association (ALA); Sustainability Round Table and Sustainability Committee

The [Sustainability Round Table \(SustainRT\)](#) was initially charged with carrying out various recommendations made by the [final report](#)⁶⁹ of the ALA Special Task Force on Sustainability. According to a current member, the round table is in the process of refining a strategic plan for its future. SustainRT’s mission is to “provide resources for the library community to support sustainability through curriculum development; collections; exhibits; events; advocacy, communication, library buildings and space design.”⁷⁰ Standing committees of the round table cover online education, outreach, programming, and book lists and resources, in addition to the typical membership, steering, and governance committees. Broadly speaking, SustainRT is meant to be a venue for collaboration on ideas regarding sustainability; accordingly, a significant product provided by the round table is a crowd-sourced list of resources tackling a variety of sustainability topics.⁷¹

The Sustainability Committee was approved in January 2021 to become a standing Council committee of ALA. Members are charged with infusing sustainability into existing initiatives while also coordinating with the various bodies under ALA to continue sustainability work.⁷²

⁶⁸ Sutton, Sarah W. “AASLH’s Task Force on Environmental Sustainability and Climate,” *American Association for State and Local History* (blog), accessed May 16, 2021, <https://aaslh.org/sustainability-task-force/>.

⁶⁹ Rebekkah Smith Aldrich et al., “Report of the ALA Special Task Force on Sustainability,” (New Orleans: ALA Annual Conference, 2018), <https://connect.ala.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=dda45277-a902-11f0-ca0a-c56206aa864c&forceDialog=0>.

⁷⁰ “Sustainability Round Table,” American Library Association, accessed May 16, 2021, <http://www.ala.org/rt/sustainrt>.

⁷¹ SustainRT resource library, *Zotero*, <https://www.zotero.org/groups/2154386/sustainrt/library>.

⁷² Holly Robison, “Call for Volunteers for New Sustainability Committee,” American Library Association News and Press Center, last modified March 10, 2021, <http://www.ala.org/news/member-news/2021/03/call-volunteers-new-sustainability-committee>.

4. Project ARCC (Archivists Responding to Climate Change)

Project ARCC is a community of archivists taking action on climate change. They believe that archivists have a professional responsibility to a) protect archival collections from the impact of climate change, b) reduce our professional carbon and ecological footprint, c) elevate relevant collections to improve public awareness and understanding of climate change, and d) preserve this epochal moment in history for future research and understanding. In the past they have participated in marches, held Climate Strike teach-ins, and developed a curriculum and resources related to climate change. They maintain a [website](#)⁷³ and social media presence. Currently, most of the activity happens in the organization's Google Group.⁷⁴

5. Society of American Archivists (SAA); Regional Archival Associations Consortium (RAAC)'s Disaster Planning and Response Resources

The RAAC works to connect regional, state, and local archival organizations with each other and with SAA. They compiled and posted a lengthy [list of resources](#) meant "to provide archival repository employees with useful information about disaster planning, response, and recovery"⁷⁵ that appears to be actively monitored. There are a variety of links to external bodies among these resources, as well as lists of national, regional, and international resources. There is a [specific list for "Climate Change and Archives"](#)⁷⁶ that includes links to some of the bodies mentioned in this report. A resource kit, "[Documenting in Times of Crisis](#),"⁷⁷ is also available and currently maintained by SAA's Crisis, Disaster, and Tragedy Response Working Group.

6. American Institute for Conservation (AIC); Alliance for Response (AFR)

AIC is the leading membership association for conservators and allied professionals preserving cultural heritage. AIC's [AFR](#)⁷⁸ initiative was launched in 2003 to bring together cultural heritage and emergency management professionals at the local level to prepare for emergencies and mitigate potential damage. AFR has led to the establishment of 31 local networks across the country. Both existing and nascent networks are encouraged to host forums, which serve to educate cultural heritage and emergency response professionals on best practices in their

⁷³ Project ARCC, accessed April 12, 2022, <https://projectarcc.org/>.

⁷⁴ To learn more about Project ARCC, you can request permission to join their [Google Group](#).

⁷⁵ "Disaster Planning and Response Resources," Regional Archival Associations Consortium (RAAC), Society of American Archivists, accessed June 13, 2021, <https://www2.archivists.org/groups/regional-archival-associations-consortium-raac/disaster-planning-and-response-resources>.

⁷⁶ "Climate Change Resources for Archivists," Regional Archival Associations Consortium (RAAC), Society of American Archivists, accessed June 13, 2021, https://www2.archivists.org/groups/regional-archival-associations-consortium-raac/climate-change-resources-for-archivists#_VzSnc6MrlIk.

⁷⁷ "Documenting in Times of Crisis: A Resource Kit," Society of American Archivists, accessed June 13, 2021, <https://www2.archivists.org/advocacy/documenting-in-times-of-crisis-a-resource-kit>.

⁷⁸ "Alliance for Response," American Institute for Conservation, accessed April 12, 2022, <https://www.culturalheritage.org/resources/emergencies/alliance-for-response>.

respective fields and to improve communication. AFR also offers a tool kit containing resources for planning forums, building relationships with emergency responders, identifying allies to develop local assistance networks, engaging your network, and helping to find support to sustain local disaster networks.

Global Context

Listed in no particular order, the efforts from international organizations below are relevant to this investigation.

1. United Nations Education, Scientific and Cultural Organization (UNESCO); “[Climate Change and World Heritage](#)” report

UNESCO’s 2006 report⁷⁹ focuses on natural and cultural sites and is one of the few resources reviewed by the Subcommittee that discusses both preventative and corrective actions to aid in the management of cultural heritage endangered by the effects of climate change. This report prompted a request for a UNESCO policy document, which is currently undergoing an update following a consultation phase.⁸⁰ While the updated policy document will have more up-to-date information regarding climate science, the 2006 report specifically makes recommendations of the sort that RBMS is investigating, i.e., how do professionals respond in practice to the effects of climate change on cultural heritage.

2. [Museums For Future](#): Culture in Support of Climate Action

Museum For Future is an independent, non-profit organization made up of cultural heritage and museum professionals around the world dedicated to fostering conversation and building museum networks in support of the Paris Agreement.⁸¹ The organization is based on the #FridaysForFuture (FFF) global strike movement inspired by Greta Thunberg’s school strike in Sweden and has adapted seven principles from FFF to guide its own operations. It is an active body publishing blog posts, posting ways to take action, and promoting events and exhibits. The organization is currently developing a call to action as well.

⁷⁹ United Nations Educational, Scientific and Cultural Organization (UNESCO), “Climate Change and World Heritage: Report on predicting and managing the impacts of climate change on World Heritage and Strategy to assist State Parties to implement appropriate management responses,” (Document WHC-06/30.COM/7.1 presented to the World Heritage Committee at its 30th session, Lithuania, July 2006), <https://whc.unesco.org/en/series/22/>.

⁸⁰ “Climate Change and World Heritage,” *UNESCO World Heritage Convention*, accessed May 31, 2021, <https://whc.unesco.org/en/climatechange/>.

⁸¹ “About Us,” Museums For Future, accessed May 17, 2021, <https://museumsforfuture.org>.

3. [Museums for Climate Action](#)

Initially, Museums for Climate Action was a competition for concepts and ideas on how museums can “unsettle and subvert the very foundations of museological thinking to support and encourage meaningful climate action.”⁸² Now, the site houses additional information about current actions taken by museums to address climate change, including initiatives, networks, books, and online resources. Most recently, an [open-access book](#)⁸³ and [toolbox](#)⁸⁴ were also published.⁸⁵

Additional Relevant Efforts

Listed in no particular order, the efforts below are relevant to this investigation, if not necessarily being led by professional bodies.

1. The Getty Conservation Institute; “[Preserving Collections in the Age of Sustainability](#)”, a three-phase course

This 10-week course held in late 2019 focused on “technical advances, practical implementation, and decision-making skills for collection preservation”.⁸⁶ The course aimed to disseminate recent research and thinking on technical aspects of environmental management while enhancing participants' critical thinking and analysis skills to enhance their decision-making and influence within institutional frameworks. The syllabus also mentions preparing participants to contribute to organizational commitments to sustainable environmental practice. This is one example of a large institution addressing sustainable collections care.

2. United States National Committee of the International Council on Monuments and Sites (US/ICOMOS)

Recent posts on the US/ICOMOS [website](#)⁸⁷ include topics of interest to RBMS, such as the diversity of cultural heritage. The site focuses on cultural heritage sites with input from the

⁸² “Why rethink museums?,” *Museums For Climate Action*, accessed May 17, 2021, <https://www.museumsforclimateaction.org/rethink/background>

⁸³ *Reimagining Museums for Climate Action*, eds. Rodney Harrison and Colin Sterling (London: Museums for Climate Action, 2021), accessed April 12, 2022, <https://www.museumsforclimateaction.org/mobilise/book>.

⁸⁴ Henry McGhie, *Mobilising Museums for Climate Action: Tools, frameworks and opportunities to accelerate climate action in and with museums* (London: Museums for Climate Action, 2021), accessed April 12, 2022, <https://www.museumsforclimateaction.org/mobilise/toolbox>.

⁸⁵ “Ideas into action,” *Museums for Climate Action*, accessed May 31, 2021, <https://www.museumsforclimateaction.org/mobilise/resources>.

⁸⁶ “Preserving Collections in the Age of Sustainability,” Getty Conservation Institute, accessed June 3, 2021, http://www.getty.edu/conservation/our_projects/education/managing/preserving_collections.html.

⁸⁷ “Climate Displacement: Historic Preservation’s Looming Challenge,” United States Committee of the International Council on Monuments and Sites, accessed May 2021, <https://usicomos.org/climate-displacement-historic-preservations-looming-challenge/>.

scientific community. Historical materials are included as part of the overall picture, but are not a primary focus.

3. RepoData

[RepoData](#)⁸⁸ is a publicly available data set that poses answers to the questions: US archives: Where are they? How will they be impacted by environmental disasters and climate change? It geolocates 18,000 archival repositories on a map of the United States and features a slider, which demonstrates how the threat of 6 feet of sea-level rise would affect archives. It was developed by Eira Tansey and Ben Goldman with research assistant Whitney Ray and support from the Society of American Archivists Foundation. See the related article, “American archives and climate change: Risks and adaptation” (Mazurczyk et al. 2018).⁸⁹

4. Consortium on Gender, Security & Human Rights; “[Confronting the Climate Crisis: Feminist Pathways to Just and Sustainable Futures](#),” virtual symposium

This virtual symposium from October 2020 utilizes a feminist framework in discussing responses to climate change within the larger context of global justice. Session recordings and a resource compilation are available via the symposium’s page.⁹⁰

⁸⁸ Ben Goldman, Eira Tansey, and Whitney Ray, “RepoData,” accessed April 12, 2022, <https://repositorydata.wordpress.com/>.

⁸⁹ Mazurczyk et al., “American archives and climate change.”

⁹⁰ “Confronting the Climate Crisis: Feminist Pathways to Just and Sustainable Futures,” Consortium on Gender, Security & Human Rights, accessed February 24, 2022, <https://genderandsecurity.org/events-news/confronting-climate-crisis-feminist-pathways-just-and-sustainable-futures>.

Section 3

What are the known and emerging best practices for mitigating the impact of cultural heritage work on the climate?

Findings

After a thorough investigation, Members of Subcommittee Three could not find any written and codified examples of best practices in the currently available literature. Therefore, the subcommittee drafted what follows as guidance and first steps toward profession-wide best practices. A standing committee within RBMS could be responsible for drafting and maintaining more comprehensive best practices. They might also conduct a survey of practices to identify current practices and areas to improve sustainability.

Framing

In writing the following guidelines for known and emerging best practices, we noticed an approximate division into three categories of the areas of impact most commonly tackled in sustainability literature: Waste, Emissions, and Policy. Efforts to make changes in these three categories of impact are required at the individual, institutional, professional, cultural, and political levels.

We have divided our recommendations for best practices loosely into these categories and offer this framework as a guide for considering how to adapt practices to improve sustainability and response to the growing climate crisis.

Key Takeaways

- 1) It's not too much money; doing the work to mitigate the impact that the cultural heritage profession has on the climate is worth the cost and worth questioning why it costs so much.
- 2) If the following suggestions do not seem like enough and you have ideas for how to push further, then keep going and push further.
- 3) If the following suggestions seem like too much effort or an overreaction, then try pushing further than you have already.

Categories of Impact

Waste

Waste within the rare materials profession primarily relates to waste in terms of the specialized supplies our industry uses to store, preserve, and ship materials. Regular business operations, such as occur at any institution or corporation, should also be assessed for waste.

Collection Management

In 2019 the Institute of Museum and Library Services published the results of a survey on the health of American cultural heritage reporting that “U.S. Institutions held nearly 13.2 billion items plus 30.7 million cubic feet and 32.6 million linear feet of collections.”⁹¹ Adequately storing and preserving this high volume of material—which continues to grow—requires a correspondingly high volume of specialized supplies, many of which “deplete natural resources”⁹² and it is long past time our profession looked more carefully at the environmental cost of this practice. The grant-funded Sustainability Tools in Cultural Heritage (STiCH) project is working to quantify the environmental impact of cultural heritage care and provide practitioners with tools to reduce the “carbon footprint of cultural heritage activities.”⁹³ So far, STiCH offers information sheets, several case studies, and a carbon footprint calculator. The calculator includes a browsable or searchable list of supplies and materials used in exhibition, storage, preservation, and conservation treatments with the ability to view 15 items at a time where you can adjust quantities of individual items and see the greenhouse gas (GHG) emissions per unit as well as the GHG total based on the quantity input as well as a total carbon footprint of the selected items.

Repositories should also consider the life cycle of the supplies they purchase. A Life Cycle Assessment (LCA) “considers environmental impacts that occur over the entire technological life cycle of a product or process,” which includes (1) raw material extraction, (2) material production, (3) product manufacturing, (4) use, (5) end-of-life, and (6) transportation required between each of the aforementioned stages.⁹⁴ When selecting a supply vendor, repositories should assess the vendor’s commitment to environmental sustainability and look for

⁹¹ Institute of Museum and Library Services, *Protecting America’s Collections: Results from the Heritage Health Information Survey* (Washington, DC: Institute of Museum and Library Services, 2019), p. 42, <https://www.ims.gov/sites/default/files/publications/documents/ims-hhis-report.pdf>.

⁹² Sarah Nunberg and Sarah Sutton, “At What Cost? It all adds up,” *STiCH*, accessed May 23, 2022, <https://stich.culturalheritage.org/at-what-cost/>.

⁹³ Sustainability Tools in Cultural Heritage (STiCH), “About Us,” accessed May 23, 2022, <https://stich.culturalheritage.org/about/>.

⁹⁴ Matthew Eckelman and Sarah Nunberg, “Life Cycle Assessment Explained,” *STiCH*, accessed May 23, 2022, <https://stich.culturalheritage.org/life-cycle-assessment-explained/>.

local vendors, which has the dual benefits of supporting a local economy and minimizing the associated carbon emissions from delivery.^{95 96}

Similarly, supplies should be reused and/or repurposed whenever possible to reduce the demand for virgin materials, which in turn reduces “the industrial practices that pollute the environment and exploit natural resources.”⁹⁷ For example, the Oregon Museum of Science and Industry (OMSI) launched a “Green Exhibit Certification” tool in June 2008 designed to help “exhibition teams consider the value of each decision and weigh both the cost and environmental benefits” that was inspired by the LEED (Leadership in Energy and Environmental Design) certification system. It is possible to adapt the MSI checklist for use in re-housing projects to extend this sustainable thinking to another common area of our professional practice. For archival collections, this can mean re-using folders (when written on in pencil), document cases (especially those with polyester label holders and reusable inserts), and record cartons.

Suggested Best Practices

- Implement regular use of the STiCH carbon calculator when selecting supplies for storage, exhibition, and conservation treatments.
- Consider the life cycle of supplies selected for storage, exhibition, and preservation.
- Source supplies from local vendors.
- Purchase materials from companies that have a commitment to environmental sustainability. (For example, Gaylord Archival has a statement on their website⁹⁸ though it does not include specifics. Other companies did not respond to requests for their practices regarding sustainability.)
- Write in pencil on folders so that it can be erased and the folders used again.
- Recycle acidic folders and materials removed from the collection (the latter can be shredded first).
- Reuse boxes for picking up materials (materials can be transferred to fresh, clean boxes after processing).
- Reuse plastic totes for picking up donations and/or temporary storage before shifting materials to more appropriate archival storage.

⁹⁵ Heidi N. Abbey, “The Green Archivist: A Primer for Adopting Affordable, Environmentally Sustainable, and Socially Responsible Archival Management Practices,” *Archival Issues* 34, no. 2 (2012): 107, https://www.jstor.org/stable/41756175?seq=20#metadata_info_tab_contents.

⁹⁶ Carli V. Lowe, “Partnering Preservation with Sustainability,” *The American Archivist* 83, no. 1 (Spring/Summer 2020): 155, <https://doi.org/10.17723/0360-9081-83.1.144>.

⁹⁷ Oregon Museum of Science and Industry, “Green Exhibit Checklist,” 2012, accessed May 23, 2022, https://omsi.edu/sites/default/files/ExhibitSEED_Green%20Exhibit%20Checklist.pdf; an earlier version of the checklist can be found here <https://www.sustainablepractice.org/wp-content/uploads/2012/12/OMSI-Green-Exhibits-Guide.pdf>.

⁹⁸ Gaylord Archival, “Our Commitment to the Environment,” Gaylord.com, accessed May 2021, <https://www.gaylord.com/commitment-to-environment>.

Shipping

Traditional shipping supplies—bubble wrap, Styrofoam peanuts, inflated plastic bags—have “incredibly long lifespan[s],” taking years to break down and posing hazards to the wildlife and environment in which they eventually degrade.⁹⁹ While paper products—cardboard boxes, crumpled paper—are more environmentally friendly, they do not protect fragile items as well as traditional supplies. Fortunately, recycled and biodegradable materials are becoming increasingly available for use in shipping and packing. The Sustainable Packaging Alliance (SPA) has identified 4 characteristics for a package to be considered sustainable: effective, efficient, cyclic, safe. When considering what packing and shipping materials to use, institutions should select biodegradable or recycled/recyclable options and avoid waste where possible.¹⁰⁰

Suggested Best Practices

- Reduce packing materials by using boxes that fit contents as closely as possible.
- Use biodegradable or recycled shipping and packing materials.
- Opt for green shipping supply companies whenever possible.

Emissions

Cultural heritage emissions come primarily from our built environments (buildings and HVAC systems) and our business operations (on-site/remote work and conference attendance). Two areas of emissions not addressed in this report (due to lack of time and capacity) are library systems and digital preservation/storage. We hope that a standing committee could devote time to investigating these high-emissions areas and make recommendations for mitigation.

Architecture/Built Environment

The movement toward green library buildings has existed for some time, with the recognition that the materials and systems used to run buildings are often not environmentally friendly or sustainable (including HVAC systems, water usage, and non-renewable building materials). Resources and examples can be found on the [Designing Libraries website](#).¹⁰¹ However, environmentally-friendly building strategies often do not include the built environment for special collections and archives, due to the assumption that preservation best practices cannot be achieved through sustainable design.

⁹⁹ Beth Asaff, “Biodegradable Shipping Supplies,” *LoveToKnow*, accessed April 19, 2021, https://greenliving.lovetoknow.com/Biodegradable_Shipping_Supplies

¹⁰⁰ David Roberge, “Why It Pays to Use Sustainable Packaging Materials,” *Industrial Packaging* (blog), June 18, 2019, <https://www.industrialpackaging.com/blog/save-money-with-sustainable-packaging-why-it-pays-to-use-sustainable-materials>.

¹⁰¹ “Green libraries: sustainable library buildings,” *Designing Libraries*, accessed May 25, 2021, <http://www.designinglibraries.org.uk/?PageID=44>.

Preservation best practices and sustainability best practices can be in conflict. We urge that rather than adopting an adversarial approach, institutions weigh the two concerns in relation to each other. Mitigating the impact of our built environments is in the best interest of our collections and communities' futures.

When weighing the needs of sustainability and preservation, institutions should ask the fundamental question: "How much can we afford to preserve?" What are the environmental repercussions of the continuing need for more space (both physical and digital), and the maintenance of that space? While institutions are increasingly adopting a post-custodial model as part of their approach to preservation, they must interrogate which collections and communities they are prioritizing and preserving, and whether they are replicating long-standing colonial and classist power dynamics. In this case, a rising tide does not raise all ships; some ships will be lifted and some will sink. The time to ask which collections will be and should be preserved is *now*.

Suggested Best Practices

No matter the size or type of institution or collection, institutions should begin their work with a comprehensive energy audit to assess sustainable design and operations. Unfortunately, this can be an expensive diagnostic tool, so we recommend working with utility companies and organizations such as the Northeast Document Conservation Center (NEDCC) who may provide assistance for free or for lower fees. Additionally, carbon footprint calculators are a free, readily available, and baseline tool that can estimate the greenhouse gasses produced by a building and its operations. The Image Permanence Institute at Rochester Institute of Technology is also conducting research regarding sustainable preservation practices and has produced an [online handbook](#)¹⁰² outlining strategies for sustainable practices in preservation environments.

If an institution has the resources and opportunity to design and build a new building, then there are a few models for green design for special collections and archives. Lowe provides an excellent overview of the current schools of thought and their benefits and drawbacks.¹⁰³

One of the most prominent models is the so-called Stehkamper Method, or Cologne Model. This passive climate control method is designed to mitigate the need for air-conditioning, focusing on "wall design, building materials, window arrangement, and shelving design."¹⁰⁴ This approach calls for triple wall design (double-thick brick, an air space, and an outer granite wall); small windows which are strategically left open for air circulation; and the avoidance of compact shelving. Padfield and Klenz Larsen point out that this approach makes relative humidity control

¹⁰² Image Permanence Institute, *IPI's Methodology for Implementing Sustainable Energy-Saving Strategies in Collection Environments* (Rochester, New York: Rochester Institute of Technology, 2017), accessed April 17, 2021, https://s3.cad.rit.edu/ipi-assets/publications/methodology_guidebook/methodology_guidebook_all.pdf.

¹⁰³ Lowe, "Partnering Preservation with Sustainability."

¹⁰⁴ Lowe, "Partnering Preservation with Sustainability," 147.

difficult, and argue instead for more strategic air circulation, rather than continuous.¹⁰⁵ While windows can allow for the entry of pollutants, window filters can mitigate this problem.

While the Stehkamper Method has been successfully utilized in a number of major building projects in Northern Europe (The Hague, the Zurich State Archives, the Koblenz Federal Archives), it has met with mixed results in other climates. The experiences of various archives in South Africa and Israel offer compelling lessons in the dangers of not considering local environments, traditional building practices, and the specific issues faced by particular collections in particular climates.¹⁰⁶ “Because traditional practices developed prior to the widespread use of fossil fuels, they tend to be both low energy and low cost.”¹⁰⁷

Well-designed passive climate control systems are more reliable than mechanical ones, and they require less maintenance. This can be beneficial for collections, as significant damage can occur in the gap between awareness of a mechanical issue and its rectification.¹⁰⁸ This reliability is increasingly important as extreme weather events and climate patterns, as well as catastrophic natural disasters, become the norm.

Building systems (including HVAC, lighting, humidity control, and shelving)

Most institutions do not have the luxury of designing a sustainable building from scratch. We recommend the adoption of both large-scale and small-scale best practices that can be adapted to specific communities and collections. While recommendations such as incorporating LEED-certified systems and Energy Star appliances are useful, they assume a particular geographical and cultural environment, to say nothing of funding resources. Local building practices and traditions that have long responded to the specific environment and resources of an area should be considered at the outset of a project, as these practices are often more efficient and sustainable than a one-size-fits-all approach.

Suggested Best Practices

Institutions can adopt a range of small-scale and large-scale approaches to building systems and appliances.¹⁰⁹ Some basic best practices include:

- Work with governmental agencies and experts to pursue and achieve LEED certification in the U.S., and its equivalent in other countries
- Preventative maintenance schedules for building management equipment
- Install Energy Star HVAC systems and appliances
- Replace CFLs with motion-activated LEDs
- Monitor water use in facilities; routinely check for and repair leaks in plumbing
- Install water-efficient fixtures

¹⁰⁵ Tim Padfield and Poul Klens Larsen, “Low Energy Air-Conditioning of Archives,” *Journal of the Society of Archivists* 27, no. 2 (2006): 213, doi.org/10.1080/00379810601101293, quoted in Carli V. Lowe, “Partnering Preservation with Sustainability.”

¹⁰⁶ Lowe, “Partnering Preservation with Sustainability,” 149-152.

¹⁰⁷ Lowe, “Partnering Preservation with Sustainability,” 152.

¹⁰⁸ Lowe, “Partnering Preservation with Sustainability,” 157.

¹⁰⁹ Abbey, “The Green Archivist,” 106.

We recommend incorporating local building practices and traditions that are suitable for the climate. Work with local experts on sustainability, architecture, and traditional practices and consider specific climate and political/social/cultural situations.

In addition to the small-scale solutions mentioned above, consider some basic process changes. For example, if unable to go without an HVAC system entirely, consider seasonally cycling the system to reduce its usage. Rearrange shelving and displays to optimize air flow, and make use of fans and heaters to control both temperature and humidity. Set all mechanical systems possible to automatically turn off and on as temperature and humidity levels necessitate. Replace current lighting systems with motion-activated LED lights.

Above all, we recommend partnering with architects and *local* experts in sustainability. Their expertise can complement that of special collections professionals and will help institutions adopt both small- and large-scale solutions that will move our profession toward greater sustainability for our collections, communities, and planet.

Business Operations: Conferences

Both virtual conferences and in-person conferences have an associated carbon footprint. A virtual conference, especially one in which participants have their cameras on for multiple hours over multiple days, contributes to the massive environmental impact of the internet.¹¹⁰ That being said, in-person national conferences are a more significant concern due to the carbon emissions associated with long-distance airplane travel.¹¹¹

The value of in-person networking and community building is significant, especially for early-career and underrepresented professionals, and the time away from day-to-day jobs (as well as, in many cases, caretaking responsibilities) helps library workers think, collaborate, learn, and become inspired. There are competing goods to balance in the discussion of conferences, and unfortunately there is not one good solution. But there are best practice approaches that we can consider at both a personal and institutional level. Carbon offsets are an option when travel is necessary, but careful research is necessary because many offset purchasing options present ethical dilemmas.^{112 113}

¹¹⁰ Kelley Travers, "How to reduce the environmental impact of your next virtual meeting," Massachusetts Institute of Technology, March 4, 2021, <https://news.mit.edu/2021/how-to-reduce-environmental-impact-next-virtual-meeting-0304>.

¹¹¹ John N. Quinton, "Cutting the carbon cost of academic travel," *Nature Reviews Earth & Environment* 1, (January 2020): 13, <https://doi.org/10.1038/s43017-019-0008-3>.

¹¹² "Open letter by the Swift Foundation rejects REDD and carbon trading as false solutions to climate change," Indigenous Environmental Network, March 14, 2019, <https://www.ienearth.org/open-letter-by-the-swift-foundation-rejects-redd-and-carbon-trading-as-false-solutions-to-climate-change/>.

¹¹³ Josie Wexler, "A Short Guide to Carbon Offsets," *Ethical Consumer*, December 3, 2017, <https://www.ethicalconsumer.org/energy/short-guide-carbon-offsets>.

Suggested Best Practices

As individuals, special collections workers should consider the impact of their travel. How much travel is really necessary in a given year, even if it is fully funded by your institution? (The prestige of funded travel is worth interrogating on an individual level as well.) If new skills could just as easily be learned from a week of reading recent publications with an away message on our email, administrators should consider advocating for this option for individuals who report to them.

Institutionally, RBMS should consider continuing 2021's excellent move towards virtual conferences, which make the conference opportunity much more affordable financially in addition to reducing carbon footprint. The value of in-person conferences could be achieved by means of non-annual in-person conferences (alternate years or every third year, perhaps). Are in-person conferences a financial necessity for the organization as currently structured? If so, financial considerations of ALA should not override the reality of the environmental impact created by an in-person conference every year. It is likely that travel will become more difficult in the coming decades due to climate disruption, so our organization would benefit from having a plan in place. RBMS should also consider a model of regional conferences that would build local networks. In this, RBMS could pioneer a model for an uncertain future in which local and regional partnerships may become even more important than they are now.

Our employers should be encouraged to weigh presentations and contributions at a local and regional level as equally valuable to such work at a national level. This recommendation applies both to funding participation in such programs and to the promotion/tenure/merit associated with such participation. Employers should also support low-impact travel options, even if they include more travel time. Travel bookings that are handled through institutional systems should prioritize low carbon footprint options over the least expensive options.

Business Operations: Work from Home vs In-Person Work

Both remote work and in-person work have associated carbon footprints, especially Zoom-heavy meeting schedules that dominated remote work during the COVID pandemic. But given the emissions associated with daily commutes, especially for institutions with poor public transportation infrastructure necessitating commutes by car,¹¹⁴ ¹¹⁵ flexibility to allow employees to work some days at home, or closer to home, each week would significantly reduce annual emissions associated with getting to and from the workplace. (It is beyond the scope of this

¹¹⁴ "Fast Facts on Transportation Greenhouse Gas Emissions," United States Environmental Protection Agency, accessed April 12, 2022, <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>, which condenses information from [Fast Facts: U.S. Transportation Sector GHG Emissions \(pdf\)](#) (December 2021, EPA-420-F-21-076).

¹¹⁵ Ralph Sims et al., "Transport," in: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Edenhofer, O., R. Pichs-Madruga, Y. Sokona, et al. (New York: Cambridge University Press, 2014), https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter8.pdf.

report, but in many cases, telecommuting and flexible schedules are also valuable for wellness and retention of employees.)

At this time, many employers opt not to include the carbon footprint of employees' daily commutes in their calculations of greenhouse gas emissions, a sleight-of-hand which erases an emissions impact which institutions have the power to mitigate.¹¹⁶

Suggested Best Practices

Special collections workers are employed by a variety of institution types and in regions with a wide variety of transportation options, and different approaches will suit different contexts. (The approach for a residential college campus versus independent research library, for example, and the approach for a city with a reliable subway system versus a sprawling area with multi-hour car commutes.) Some of the work of special collections simply needs to be done in-person, on-site at the repository, such as digitizing materials, cataloging materials, providing materials to researchers in a reading room, or managing facilities. That being said, employers should be encouraged to offer subsidies for public transportation. They should be encouraged to allow flexible schedules and remote work for a variety of reasons, but for the purposes of this document because doing so would reduce the carbon footprint associated with a daily commute.

As a professional organization, RBMS can advocate for these best practices. A statement that it is possible to provide remote work options without compromising service in special collections would provide employees with leverage at their local institutions, for example.

Policy

Cultural heritage practitioners are subject to policies on various levels. Advocating for policy changes across those various levels can move our field toward more sustainable practices and mitigate our overall impact on the environment.

Political Advocacy: Corporate Relationships

Purchasing from and working with corporations is part of library practice, but not all corporations follow the same practices of sustainability. Corporations can be measured for environmental, social, and economic sustainability. It can, however, be difficult to determine which corporations are more sustainable and what oversight there is for sustainability. For reference, the United Nations Global Compact has a Guide to Corporate Sustainability.¹¹⁷

¹¹⁶ Kevin Luten, "Should emissions from employee commutes be included in company GHG inventories?," *Grist*, March 28, 2008, <https://grist.org/article/commute-conundrum/>.

¹¹⁷ United Nations Global Compact, *Guide to Corporate Sustainability* (New York: United Nations Global Compact, December 2014), accessed April 12, 2022, https://d306pr3pise04h.cloudfront.net/docs/publications%2FUN_Global_Compact_Guide_to_Corporate_Sustainability.pdf.

Suggested Best Practices

Preferential purchasing from corporations with transparent sustainability practices is good. Only purchasing from local producers and distributors OR corporations with completely transparent sustainability goals is best.

Political Advocacy: Governmental Practices

Public and privately funded special collections repositories rely on government oversight to determine our operations and continued role in the community. Government guidelines vary by region, which greatly impacts the ability for the profession to create a unified best practice for sustainability. However, we all hold power in our local region to push for change and reach out to others in our region doing the same. We believe that libraries hold no responsibility to be neutral and arguments in that vein are unproductive. We encourage you to advocate for the sustainability of your community.

Suggested Best Practices

Lobby governments to create standards that require sustainability.

Labor: Credit for Work

Promotion, tenure, and merit evaluation documents should include credit for sustainability or climate readiness work, as it should be one of the lenses we use to do our work. Not everyone will demonstrate the same level of interest or skills in this area, but it needs to be recognized as a core value of librarianship,¹¹⁸ just as access, diversity, and intellectual freedom are recognized.¹¹⁹ For this reason, it would not be inappropriate to see an increase in sustainability and climate readiness jobs listed in libraries in the coming years. When a dedicated position is not possible, formal documentation of this work as part of an individual's job description would be appropriate.

If sustainability work is viewed as a personal interest or an add-on task, it will be done poorly or it will not be done, or it will be demoralizing for the people doing the work on top of their assigned duties. Rather, sustainability work should be integrated into the work of librarianship.

Suggested Best Practices

Including credit for sustainability and climate readiness work could be accomplished in a variety of ways depending on the institution, including counting it as an aspect of librarianship work or awarding additional points for this work in a numerical metric for calculating

¹¹⁸ "ALA adding sustainability as a core value of librarianship," American Library Association, May 14, 2019, <https://www.ala.org/news/press-releases/2019/05/ala-adding-sustainability-core-value-librarianship>.

¹¹⁹ "Core Values of Librarianship," American Library Association, last modified January 2019, <https://www.ala.org/advocacy/intfreedom/corevalues>.

promotion/tenure/merit. At least as much value as is placed on national networks should be placed on regional relationships as well.

Labor: Productivity

Productivity culture is bad for people and institutions, and leads to waste and crisis thinking. Many workplaces either openly or tacitly discourage downtime—being busy is the status quo. When everyone is busy all the time, it is difficult to thoughtfully consider whether we really need this new piece of equipment or if we can solve a problem with the resources we already have. Markers of white supremacy culture include productivity for productivity's sake and a false sense of urgency.¹²⁰ This productivity culture in the workplace can lead not only to burnout of individuals but also overuse of resources on projects that are not truly necessary.

Suggested Best Practices

We can redefine success to include the time to take a thoughtful approach to all new work. Do we have the resources, both human and material, to acquire new materials for the collection? We can redefine the ultimate special collections success story away from a new building with a donor's name on it, and instead celebrate incremental victories such as renovating an existing space to be safe for collections while reducing its carbon footprint.

Greenwashing and Economics

Greenwashing—“the practice of making unwarranted or overblown claims of sustainability or environmental friendliness”¹²¹— is a marketing strategy used by corporations for capital gains, but it does not mean that a product or practice is truly more sustainable. (A readily recognizable example of this practice is hotels “asking guests to reuse their towels to save the environment” resulting in lower laundering costs for the hotels.¹²²) Additionally, following best environmental practices is not always going to be more “economically efficient.” The economic efficiency of being climate ready is an additional area for future expansion and research.

Suggested Best Practices

To avoid falling for greenwashing, research if a company is truly sustainable and use products from companies with transparent environmental practices. The United Nations Global Compact's Guide to Corporate Sustainability includes checklists for assessing a corporation's record on Human Rights, Labor, Environmental stewardship, Anti-corruption, Societal support, and Supply chains.¹²³ Value practices and people over prices.

¹²⁰ Tema Okun, “White Supremacy Culture Characteristics,” last modified 2021, accessed February 24, 2022, <https://www.whitesupremacyculture.info/characteristics.html>.

¹²¹ Richard Dahl, “Green Washing: Do You Know What You're Buying?,” *Environmental Health Perspectives* 118, no. 6 (June 2010): A246, <https://doi.org/10.1289/ehp.118-a246>.

¹²² Will Kenton, “Greenwashing,” *Investopedia*, updated March 22, 2022, <https://www.investopedia.com/terms/g/greenwashing.asp>.

¹²³ United Nations Global Compact, *Guide to Corporate Sustainability*.

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Appendix A

Additional Organizations and Efforts Investigated

Appendix A lists, in no particular order, efforts and organizations that Subcommittee Two reviewed but determined provided no helpful or relevant information for their investigation of the questions: How are cultural heritage organizations beyond RBMS responding to climate change? What is happening in the field broadly?

A. “Climate Change Statement.” *Fairbanks Museum and Planetarium*. Accessed May 5, 2021. <https://www.fairbanksmuseum.org/about/climate-change>

Statement and action plan outlining the current climate crisis and work to be undertaken by the museum, including public programming, contributing to climate research, and updating structures for energy efficiency.

B. “Smithsonian Statement on Climate Change.” *The Smithsonian Institution*. Accessed May 5, 2021.

<https://www.si.edu/newsdesk/releases/smithsonian-statement-climate-change>

A summary of the Smithsonian’s approach to sustainability and carbon neutrality in construction and research all focused around their duty to share research and to increase public knowledge about the role humans play in climate change.

C. Image Permanence Institute, “Understanding the Mechanical Behavior of Library & Archive Materials with Changes in Relative Humidity.” YouTube Video, 1hr 10 minutes, 2020. Accessed June 13, 2021. https://www.youtube.com/watch?v=4BX_chcVuFE.

Their work is ongoing, but this specific video is dated Oct 13, 2020. This is a discussion of a photogrammetry technique called Digital Image Correlation (DIC) which can be used to understand the effects of humidity on materials. It is one tool in IPI’s efforts towards sustainable preservation environmental parameters. This is a very specific technical resource. However, it may be worth looking at IPI more broadly to see if they have any policy documents.

D. Dastgerdi, A.S.; Sargolini, M.; Pierantoni, I. “Climate Change Challenges to Existing Cultural Heritage Policy.” *Sustainability* 11, no. 19 (2019).

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This multi-author study performed a systematic review of reports published by UNESCO and its advisory bodies about the impacts of climate change on world heritage sites. The authors note that climate change forecasts and impacts are based on uncertainty and shifting parameters. Calls for a more proactive approach instead of the traditional, conservative approach. Suggests a more dynamic approach that evaluates sites individually instead of a “save all” approach.

E. American Library Association (ALA); Task Force on United Nations 2030 Sustainable Development Goals

The task force is devoted to getting more libraries to work towards achieving the United Nations' Sustainable Development Goals by developing and submitting a strategic plan. It is not specific to climate change.

F. Association of College and Research Libraries (ACRL)

There does not seem to be any active efforts coming directly from ACRL related to climate change. There is evidence that addressing the topic is important to the professional network, as their journal recently published an article¹²⁴ tracing the past and current efforts to address climate change and its effects in academic and research libraries specifically.

G. Wiser, Jeana C. “Resilient Preservation: in the face of climate change + sea level rise,” (powerpoint from the National Trust for Historic Preservation, Newport, Rhode Island, April 2016), <https://historyabovewater.org/wp-content/uploads/2016/10/Wiser-Jeana.pdf>

The information is interesting and good for RBMS, but we need more current data. Not a lot of new or currently helpful information.

H. “America’s Eroding Edges: Climate Change is an American Story,” *National Trust for Historic Preservation*, accessed June 13, 2021, <https://savingplaces.org/americas-eroding-edges#.YMZ9RvIKiUk>

This effort’s focus is on the effects of coastal erosion and saving communities and natural resources. There is little to no discussion of effects on historical structures and materials; if there is, then it is centered on the South Pacific.

I. Investigated as potential Larger Context

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¹²⁴ Madeleine Charney and Petra Hauke, “Global action on the urgency of climate change: academic and research libraries’ contributions,” *College and Research Libraries News* 81, no. 3 (2020): 114-117, <https://crln.acrl.org/index.php/crlnews/article/view/24315/32116>.

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Appendix B

Additional Sources Consulted

Appendix B lists, in alphabetical order, additional sources consulted by the RBMS Climate Readiness Task Force’s subcommittees that were not ultimately used in compiling this report.

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