



Early Modern Studies Journal
Volume 10: Climate Change and the Little Ice Age
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"Introduction to Volume 10: Climate Change and the Little Ice Age"

Flash floods and mega-storms. Extreme heat and drought. Unprecedented snowfalls and months-long freezes. These early modern weather extremes could describe today's climate. My own response to global warming has been to look to the past to understand how those before me endured climate change, both materially and emotionally. While the Earth's climate has gone through multiple changes in its deep history, the Little Ice Age, typically dated between 1310–1810, with the most intense period occurring between 1580–1710, is unique in providing detailed past narratives of climate change experience [\[1\]](#) As an era that can offer a historical reflection on our own crises of extreme and unstable weather, the early modern period gives us insight into how a more self-sufficient agricultural society suffered and survived. And, as a time of expanding travel, trade, and colonialism, it helps to expose the roots of today's anthropogenic global warming. This special volume on *Climate Change and the Little Ice Age* thus not only foregrounds the contributions literary scholars can make to the field of climate change studies, but it also shows us how, in examining literary and documentary narratives about weather and climate, these narratives can contribute to helping us make sense of the Anthropocene.

Little Ice Age scholarship has so far been the particular domain of climate historians, anthropologists, and geographers. Inspired, in part, by the crucial, and still relevant work of historians such as Emmanuel LeRoy Ladurie and Hubert Lamb, scholars such as Dagomar Degroot, Brian Fagan, Geoffrey Parker, and Sam White have investigated the Little Ice Age in relation to a multitude of historical conditions, including war, famine, political and social turmoil, colonization, innovation, and resilience.[\[2\]](#) As they explain, this period of global cooling and climatic volatility was a multi-causal event, with contributory factors including sunspot and volcanic activity and probable changes to the earth's tilt and the circulation of ocean currents.[\[3\]](#) Simon L. Lewis and Mark A. Maslin have further posited an anthropogenic cause

for Little Ice Age cooling, arguing that the colonial genocide of Indigenous peoples would have led to the reforestation of previously agricultural lands and thereby to higher carbon absorption. Lewis and Maslin have also pinpointed the early modern period as a significant turning point in human history, with the global movement of people and goods initiating the changes that have led to our unstable Anthropocene conditions.^[4] There has been no official recognition of Lewis and Maslin's suggestion that the year 1610 should be recognized for the "Orbis Spike" denoting the beginning of a new geological age; other theories that seek to date Anthropocene origins, such as nineteenth-century industrialization, or twentieth-century development of nuclear weapons, remain logical possibilities. Yet this historical focus on the premodern compels us to recognize the damaging long-term effects of colonization and early capitalism on contemporary climate. As the work of Anthropocene scholars such as Dipesh Chakrabarty, Amitav Ghosh, Kyle Whyte, and Kathryn Yusoff further underscores, the history of resource extraction, enslavement, genocide, and plantation agriculture that accompanied European mercantile and colonial expansion must be acknowledged if we are to come to grips with climate change today.^[5]

The international group of scholars in this volume help us deepen our understanding of what we can learn from Little Ice Age narratives about weather and climate. Much of the initial proof for global cooling has been provided by scientific proxy data, such as ice core, tree ring, and pollen samples; and the term Little Ice Age, coined by glaciologist François Matthes in 1939, was meant to draw attention to the period's glacial expansion.^[6] As our authors demonstrate, however, narrative proxy records, which include items such as weather pamphlets, chronicles, diaries, poems, plays, colonial documents including questionnaires, monuments, and botanical records, provide equally important, and often more nuanced and personal evidence of the on-the-ground effects of climate change. In this regard, these essays offer substantial and groundbreaking contributions to the developing field of premodern climate studies. To date, many previous critics have chosen to focus less on climate and more on the weather—as a metaphor, an element, or as a factor in theater performance.^[7] Specifically climate-focused work has come from scholars such as Sophie Chiari, whose article on *The Tempest* is included here, Robert Markley, and Tobias Menely.^[8] Most recently, *Early Modern Women: An Interdisciplinary Journal* contributed a series of forum essays on women and climate change.^[9] Climate and weather narratives are also being collected to create online databases, including *Euro-Climhist—Ways to Weather Hindcasting*; *Extreme Weather in the UK: The Tempest Database*; and my own *Weather Extremes in England's Little Ice Age 1500–1700*.^[10] Premodern climate narratives, as the essays in this volume establish, are central to deepening our collective thinking about climate change, both past and present.

Climate Narratives and Global History

The ways we tell stories about extreme weather and climate change is at the heart of Kellie Robertson's essay, which examines three weather narratives written between the beginning of the Little Ice Age in the early 1300s and 1652. Robertson frames her essay as a response to Amitav Ghosh's 2016 claim that climate and weather were serious topics for fiction only before the nineteenth century.^[11] Yet, as Robertson points out, Ghosh thinks more about how contemporary fiction falls short, and less about what we can learn from premodern texts. In

response, Robertson examines literary and documentary depictions of weather in the long Little Ice Age. Her two earliest records come from the early fourteenth-century estates poem, *The Simonie*, which recalls a devastating crop failure and famine due to heavy rain, and the chronicle-style accounts of the 1362 windstorm from the Anonymous of Canterbury manuscript; this storm was also memorialized in the late-fourteenth-century alliterative poem *Piers Plowman*. Robertson also examines a later account, which describes the impact of a lightning bolt that struck the church of Church Lawton, near Chester, in 1652. This disaster was recounted in the minister's letters and was popularized in pamphlet form by "Protestant moralist" Charles Hammond. As Robertson argues, reading these texts as bionarratives allows us to recognize the ways in which they bring humans into close relationship and conversation with the weather, even as they attempt to "fashion collective truth." In their providential interpretations, which ascribe weather extremes and climate volatility to human sin, these texts reveal a surprisingly modern awareness of anthropogenic causation. This moral perspective, Robertson concludes, is one we also confront in our own narratives of anthropogenic climate change. As we wrestle with understanding and accepting collective human responsibility, we, like our premodern forebears, find ourselves faced with the necessity of changing our behaviors and ethical relationships with a beleaguered Earth.

Laurie Johnson's essay investigates both historical climate change narratives and the critical narratives that underpin Little Ice Age scholarship, while also offering a case study of how climate change might have affected the development of the Elizabethan playhouse. The term Little Ice Age naturally invites an emphasis on cold weather, potentially obscuring a myriad of other disruptive weather patterns, including drought and heat as well as severe storms and floods. As Johnson further observes, scholars have had a tendency to conflate the experience of the British Isles with that of Europe, which can lead to misrepresentations of English weather and climate. To reassess these assumptions, Johnson draws on weather data from John Stow's *Annales* (1605), Thomas Short's retrospective *A General Chronological History of the Air, Weather, Seasons & Meteors* (1749), Nathaniel Bacon's late-sixteenth-century letters, and John Dee's similarly dated diaries to suggest that stereotypical frosts and freezes were less common than they would become in the seventeenth century. Both wet weather and hot spells, he suggests, were likely more important than the cold in redefining the touring habits of playing companies and informing the building and location of playhouses. Asking important questions about how we use climate data to pursue literary analysis and historical reconstruction, Johnson concludes with a discussion of the political challenges that climate research, even of the historical kind, can face.

The final three essays in this volume explore a variety of complex relationships among the Little Ice Age, the Anthropocene, and colonialism and resource extraction. Sophie Chiari's essay expands on post-colonial discussions of *The Tempest* through a climate change lens, focusing particularly on Prospero's pursuit of a Baconian "dominion over nature." As Chiari demonstrates, Prospero functions as a colonial plantation manager, extracting the island's wealth and enslaving its native inhabitants to do his bidding. In first establishing the "double climate" of the play—simultaneously harsh and temperate—Chiari reveals the way that climate contributes to the shaping of characters, and in turn, the ways that character responses to and relationships with their environment shape the climate. For instance, Caliban's intimate

knowledge and relational understanding of his island and its gifts integrates him within its ecology and minimizes his impact. However, Prospero's imperialist vision of hierarchical control over the island and its inhabitants analogizes colonial devastation of Indigenous lands and peoples across the globe. As Chiari argues, while Little Ice Age climate change emerges through the island's climatic instability, the play also prefigures the Anthropocene through references to over-fishing, mineral extraction, and Prospero's settler-colonial practices, and brings the early modern period into close relationship with today's global warming.

Patricia Phillippy's essay likewise investigates the connections between climate change and settler-colonialism, with particular emphasis on the transatlantic exchange of corn, or maize. While this plant played an integral role in Indigenous diets across the Americas, in England it was both an attractive curiosity to be experimented with in elite gardens as well as an alien and "barbarous" representation of Indigenous foodways. As Phillippy explains, race- and class-based prejudice both restricted and defined the use of this fast-growing, high yield, and high carbohydrate plant in England and the New England colonies. In England, corn's association with the Americas prevented it from being adopted to improve food security during the frequent occurrences of crop failure and famine during the Little Ice Age. Further reinforced by the dehumanization of the poor in England, these prejudices ensured that it was not until the eighteenth century that corn would be cultivated as a food crop. In the colonies, however, starving settlers drew on similar dehumanizing distinctions to dismiss their biases after the failure of imported wheat crops. As the settlers prioritized their own needs to justify stealing Indigenous supplies, thus transferring their experience of famine onto the original peoples, they reflected the dynamic that privileged elite curiosity over the survival of the poor. In a final reading, Phillippy discusses the funeral monument of William Austin, which visually and scripturally unites wheat with godliness—a connection that underpins English fearfulness of ingesting foods associated with dehumanized "others," as well as settler attempts to impose their own agricultural practices on the ecologically distinct Americas.

In the final essay of this volume, Victoria Ríos Castaño brings our attention to the Spanish colonization of the Americas to examine the evidence of Indigenous genocide recorded in the Peruvian *Relaciones geográficas de Indias*. These documents, as Ríos Castaño explains, include detailed questionnaires which were managed by Spanish officials; in turn, they invited local Spanish governors and administrators as well as Incan representatives to contribute their knowledge and experience to these documents. While the questions covered a wide range of subjects from climate and weather conditions to plant and animal life, Ríos Castaño focuses on those collecting evidence for the growth or decline of Indigenous populations, as well as those inquiring about Indigenous living conditions and health. In the context of Lewis and Maslin's contentions that the "Great Dying," or Indigenous genocide, may have contributed to Little Ice Age cooling, the *Relaciones*, she argues, can provide important eyewitness evidence of the extent and effects of Spanish colonialism on the Incan people and their environments. As she demonstrates, these documents record and memorialize the voices and observations of the Inca themselves, who lucidly recount the destruction wreaked on their people by war, disease, enslavement, and relocation.

As these essays open up questions about the ways in which historical narratives can help us to understand weather and climate, both past and present, they also affirm that we cannot separate the Little Ice Age from the Anthropocene. In our own time of climate crisis, in which we

continue to fight against climate denialism, corporate greed, and a rampant determination to continue extractivist practices that destroy lands, peoples, and creatures alike, it is my hope that the diverse perspectives offered by the authors in this volume will not only showcase new directions for premodern climate studies but also contribute to and inspire further discussion of climate change throughout global history.

Notes

- [1] For dating, see Sam White, "The Real Little Ice Age," *Journal of Interdisciplinary History* 14, no. 3 (2014): 327–52, 348–51.
- [2] Emmanuel LeRoy Ladurie, *Times of Feast, Times of Famine: A History of Climate Since the Year 1000*, translated by Barbara Bray (Garden City, NY: Doubleday, 1971); H. H. Lamb, *Climate, History, and the Modern World*, 2nd ed. (London: Routledge, 1995), and *Historic Storms of the North Sea, British Isles, and Northwest Europe* (Cambridge: Cambridge University Press, 1991); Dagomar Degroot, *The Frigid Golden Age: Climate Change, the Little Ice Age, and the Dutch Republic 1560–1720* (Cambridge: Cambridge University Press, 2018); Brian Fagan, *The Little Ice Age: How Climate Made History 1300–1850* (New York: Basic Books, 2000); Geoffrey Parker, *Global Crisis: War, Climate Change and Catastrophe in the Seventeenth Century* (New Haven and London: Yale University Press, 2013); Sam White, *A Cold Welcome: The Little Ice Age and Europe's Encounter with North America* (Cambridge MA and London: Harvard University Press, 2017). See, as well, Wolfgang Behringer, *A Cultural History of Climate* (Cambridge UK and Malden MA: Polity, 2010); Philipp Blom, *Nature's Mutiny: How the Little Ice Age of the Long Seventeenth Century Transformed the West and Shaped the Present* (New York: Liveright/Norton, 2019); Mike Hulme, *Weathered: Cultures of Climate* (London: Sage, 2017) and *Climate Change* (London: Routledge, 2022); *The Palgrave Handbook of Climate History*, edited by Sam White, Christian Pfister, Franz Mauelshagen (London: Palgrave Macmillan, 2018).
- [3] For discussions of causes, see Degroot, *Golden Age*, Ch. 1; Fagan, *Little Ice Age*, 23–28; Parker, *Global Crisis*, Ch. 1; White, *Cold Welcome*, 21, 76–77.
- [4] Simon L. Lewis and Mark A. Maslin, "Defining the Anthropocene," *Nature* 519 (March 2015): 171–80; Lewis and Maslin, *The Human Planet: How We Created the Anthropocene* (New Haven and London: Yale University Press, 2018).
- [5] Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (Chicago: University of Chicago Press, 2021); Amitav Ghosh, *The Nutmeg's Curse: Parables for a Planet in Crisis* (Chicago: University of Chicago Press, 2021); Kyle Whyte, "Indigenous Climate Change Studies: Indigenizing Futures, Decolonizing the Anthropocene," *English Language Notes* 55, no. 1–2 (2017): 153–62; Kathryn Yusoff, *A Billion Black Anthropocenes or None* (Minneapolis: University of Minnesota Press, 2018).
- [6] For further descriptions of proxy data, see Parker, *Global Crisis*, xix.
- [7] See, for instance, Jennifer Mae Hamilton, *This Contentious Storm: An Ecocritical and Performance History of King Lear* (London: Bloomsbury, 2017); Alexandra Harris, *Weatherland: Writers and Artists Under English Skies* (New York: Thames and Hudson, 2015); Vladimir Janković, *Reading the Skies: A Cultural History of English Weather, 1650–1820* (Chicago and London: University of Chicago Press, 2000); Gwilym Jones, *Shakespeare's Storms* (Manchester: Manchester University Press, 2015); Evelyn O'Malley, *Weathering Shakespeare: Audiences and Open-Air Performance* (London and New York: Bloomsbury, 2021).
- [8] Sophie Chiari, *Shakespeare's Representation of Weather, Climate and Environment: The Early Modern 'Fated Sky'* (Edinburgh: Edinburgh University Press, 2019); Robert Markley, "Summer's Lease: Shakespeare in the Little Ice Age," in *Early Modern Ecocriticism: From the Florentine Codex to Shakespeare*, edited by Thomas Hallock, Ivo Kamps, and Karen L. Raber (New York: Palgrave Macmillan, 2008), 131–42; Tobias Menely, *Climate and the Making of Worlds: Toward a Geohistorical Poetics* (Chicago: University of Chicago Press, 2021).
- [9] "Forum: Early Modern Women and Climate," *Early Modern Women: An Interdisciplinary Journal* 18, no. 1 (2023): 89–141.
- [10] Euro-Climhist, https://www.euroclimhist.unibe.ch/index_eng.html; *Tempest Database*, <https://www.nottingham.ac.uk/geography/extreme-weather/search/>; *Weather Extremes in England's Little Ice Age*, <https://weather-extremes-in-englands-little-ice-age-westernu.hub.arcgis.com>.

[\[11\]](#) See Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (Chicago and London: University of Chicago Press, 2016). As Robertson points out, and as Ghosh would no doubt agree, climate fiction is now a well-represented twenty-first-century genre.