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# Past Answers to Present Concerns. The Relevance of the Premodern Past for 21st Century Policy Planners: Comments on the State of the Field

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## ABSTRACT

How is history relevant to the present, or indeed the future? Governments around the world have used history to inform planning and decision-making in various fields for years, but more recently it has taken on a renewed importance as governments grapple with increasingly complex challenges arising from the impacts of climatic change. Yet identifying "lessons from the past" is not straightforward. Especially in the case of big questions about historical structures and social processes, establishing precise causal relationships is complex and interpretive, making consensus difficult among specialists. A second major challenge arises over the uses of history. Historical precedent can and does play a role in some contexts in helping formulate new strategies for addressing local environmental challenges. At the national level policy-makers and politicians often look to the past for inspiration, guidance, or justification. In both respects, the cases and examples chosen are often highly selective and tend to align with pre-existing assumptions. This article briefly reviews these challenges within the context of climate change and associated environmental and sustainability issues, comments on recent work in the field, and suggests some ways forward for historians.

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## 1 | Introduction: The Challenge

The use of historical research to inform policy decisions in fields such as urban planning, environmental policy, and international diplomacy is not new, but in recent years it has taken on a renewed importance as governments grapple with increasingly complex challenges (Armstrong et al. 2017; Jackson et al. 2018) in the context of a changing climate, a growing population and threats to socio-economic and environmental resilience. In this overview we comment on the ways in which historical examples can be of value, illustrate some general methodological issues, and present two relevant sets of case studies. We contend that careful historical analysis can, and should, make a valuable contribution to policy and communities in a changing world in areas such as land-use management, disaster risk reduction, and sustainability planning, but for this to happen historians need to take the initiative in reaching out to stakeholders at all levels.

Identifying "lessons from the past" is challenging, because establishing precise causal relationships is complex and interpretive, making consensus among specialists difficult. This is especially true of the big questions about historical structures and social processes (Cronon 1992; Lucas 2018), for which alternative hypotheses can rarely be rejected with certainty. Historians are aware that since unknowns and uncertainties compound as data are aggregated and as interpretation moves toward larger scales of analysis, agreement can become increasingly difficult to reach. It is nevertheless possible to present an aggregate perspective that represents a broad consensus about key issues (Hulme 2011; White et al. 2023). Compared with engaging with global issues, communicating such "lessons" in the context of locally focused research may often be easier to achieve, because researchers can interface directly with stakeholder interests "on the ground." In this situation sensitive and targeted outreach and response to local cultures, politics, and vested interests is crucial.

Nevertheless, the question of whom historians and other social scientists and humanists wish to address and with what aims in mind is central (Cairney and Oliver 2020). For the purposes of the present the discussion we are concerned with the general challenges historians confront, although it is clear that international, national, regional, and local levels of concern require different levels of engagement and network-building. Our point remains that policymakers and politicians at all levels often look to the past to lend legitimacy to their policies. The examples they choose, however, are often highly selective and tend to align with pre-existing policies and assumptions (Jackson et al. 2022b). For those scholars who want to demonstrate the value of an understanding of the past to policy-makers and communities, it is clear that they need to initiate the contact, demonstrate not only the relevance of their material but also its limitations, and specify precisely how it might be of practical use. The nature of the research questions, the structure, funding and composition of the research group itself, and of course the wishes of the involved scholars will determine to what extent this sort of engagement may be either relevant or appropriate.

We identify four difficulties that inhibit the process of making history relevant in contemporary environmental and sustainability policy. First, complex historical arguments are often inaccessible for policy-makers. Second, politicians generally focus on historical writing that is focused on their own national traditions and political evolution, which oversimplifies or misrepresents causal relationships, and tends to overlook the environment as a factor in human affairs. Third, while both scholars and the wider public draw lessons from the past that might be relevant to their present, the ground rules for establishing analogies between past and present remain vague. Finally, the examination of how environmental and climatic stress affected historical societies remains fragmented in terms of approach and scientific vocabulary, further hindering its conduct and impact (Degroot et al. 2021; Haldon et al. 2018; Opitz et al. 2021). Although these points are not new (e.g., Jackson, Dugmore, and Riede 2018; Smith 2021), the question of how to address them remains.

## 2 | Nuancing the Past: Continuity, Rupture, Agency, and Belief

A nuanced approach to historical interpretation should take account of both continuities and ruptures in society–environment interactions, and build the role of human agency more centrally into the ways in which societal resilience and the potential for transformation are part of the "normal" configuration of a social–economic system. This foundation facilitates new ways of thinking about how cultures adapted to challenges, focusing on culture-specific "ways of seeing" (e.g., Butzer 2012; Rosen 2007; Tainter 2000; Tainter and Crumley 2007).

First priority is to present historical data in an accessible way, a prerequisite for addressing contemporary issues. Second, such work needs to be presented in spaces appropriate to the readership whose attention historians and archeologists wish to attract. Third, the data, methodology, and analysis should be robust. Case studies, for example, need to be presented in a format that renders different past phenomena comparable; where comparison is important, the criteria for comparability and the relevant scale need to be carefully selected. A clear definition is required of what it is that the case studies are intended to illustrate. This more structured approach can then inform an appropriate selection of aspects for a more robust comparison (Tubi et al. 2022; Haldon et al. 2020; Turchin et al. 2017; van Bavel and Curtis 2016). We identify three major functional types of historical analysis both in general terms with respect to major systemic and structural changes over time, as well as in respect of specific environmental and societal contexts (see Table 1):

a. Type 1—Broad-brush quantitative analyses based on mathematical modeling. These can identify long-term structural changes and draw out patterns in the ways in which human societies evolve and how they respond to major systemic and structural challenges across time, in scale, and in frequency. They can thus suggest potential future trends and problems based on past structural and systemic evolutionary tracks.[1]

b. Type 2—"Big-picture" comparative discussion of one or more major societal transformations, including those that

**TABLE 1** | Different levels of analysis of the past.

| Type | Type 1 | Type 2 | Type 3 |
|---|---|---|---|
| Level of historical research | Broad-brush quantitative analysis of multiple historical cases | "Big-picture" comparative discussion of one or more major societal transformations in their specific environmental context; regional or micro-regional analysis to zoom in on key aspects | Single historical case-studies of specific regional or local political–ecological systems with direct implications for a contemporary situation |
| Potential research question | What is the connection between climate and state formation? | How did the different North Atlantic communities cope with longer-term climatic changes between the 10th and 19th centuries? | How did the Ottoman state cope with the Little Ice Age? |
| Subject | General historical patterns and outcomes | In-depth case-studies of state/societal resilience/sustainability; regional/sub-regional case-studies exemplifying key aspects. Most effective when constructed on the basis of multiple Type 3 case studies | Regional/sub-regional case studies |
| Temporal scale | Multi-centennial—millennial | Annual/decadal—centennial | Annual/decadal—millennial |
| Spatial extent | Hemispheric/global | Supra-regional and regional/local | Regional/local |
| Function | Identification/isolation of patterns in human societal development | Identification of functional causal relationships between social structure, environment, beliefs, and agents' behavior. Identification of local and regional variations within broader patterns | Identification of specific cultural practices relevant to sustainable or unsustainable systems and future policy needs |
| Data collection | Indexing and collation of general historical surveys and environmental data | Detailed analysis of original written, visual, environmental, and archeological evidence, including source-critical analysis and evaluation | Analysis of all evidence for social, institutional, and cultural practice in highly localized environmental context and observe impact of change at local level |
| Strengths | Extensive quantifiable database permits identification of shorter- and longer-term patterns | Describes and accounts for social and cultural institutions; relates cause to effect through analysis of beliefs about society and environment, placing social praxis in direct relation to belief systems | Highlights significant issues in terms of sustainable social, cultural, and environmental relationships; can speak to contemporary concerns in same or similar cultural or environmental contexts |
| Weaknesses | Does not relate agents' beliefs and behavior causally to shifts in patterns. Potential for compounding errors or ignoring shifts in data collection and interpretation; significant uncertainty; confusion of correlation with causation; problems with coding; mistaking statistical randomness for patterns. | Cannot isolate broader patterns other than on an ad hoc and heuristic analogical basis. Subject to ongoing shifts in research results | Can only work at highly localized level; has broader value only when incorporated into Type 2 studies |

look in greater detail at the role of agency, beliefs, and social praxis, through critical analysis of the specialist literature, with examples drawn from among Type 3 single historical case-studies. This approach aims to reveal forms of societal response to environmental stress factors across specific societies and explain variations between similar socio-cultural systems. To offer parallels adequate to the task of comparing past and present, such comparisons must be structured within an explicit analytical and heuristic framework, with a systematic comparison based on a set of agreed criteria and shared variables. Such studies are now also exploiting data from natural and human archives to pursue questions about the relationship between climate and societal change or conflict in different regions and periods (Travis et al. 2022). They can have relevance to contemporary policy and planning largely as background frameworks within which broader trends can be identified (e.g., Hegmon et al. 2018; Riede 2014; Vésteinsson et al. 2019).

c. Type 3—Single historical case-studies of specific regional or local political–ecological systems, used to identify structures, beliefs, and behaviors which led to vulnerability or resilience. Such case studies offer lessons on the impacts of societal responses for a given society as well as on the distributional effects across groups within it.

Sophisticated Type 1 mass data projects can identify patterns across societies. Demonstrable statistical correlations built upon such large datasets could evaluate the connections between observed phenomena and a range of potential causal factors, thus highlighting the frequency of particular configurations of structural relationships and patterns (e.g., Riris et al. 2024). Peter Turchin and his team's Seshat model, for example, has at its core what is described as a "demographical structural theory," according to which the internal stability of a premodern state depends largely on population dynamics and the relationship between numbers of producers and the demands of elites. Preliminary results from Seshat suggest that variables such as population, polity size, administration, and governance, share tight evolutionary relationships (Turchin et al. 2015, 2017).

Yet two obvious problems present themselves. First, the cause-and-effect cycles encouraged by the Seshat model are not reflected in the discontinuities and sudden changes from one regime to another, or the temporary stagnations and emergent characteristics of demographic history (Bonneuil 2005; Preiser-Kapeller 2012).

Second, the processes required to standardize the diverse data and permit the identification of quantitative regularities and relationships inevitably homogenize the variety of different socio-cultural systems (van Bavel et al. 2019), while the process of reconciling the different degrees of refinement of paleoenvironmental, historical, and archeological data presents its own challenges (Li et al. 2023; Haldon et al. 2018). The homogenization and lower resolution might facilitate the identification of trends, but it does not aid with the most acute needs for the present: clarifying the *mechanics* of societal change and the navigation of multidecadal-scale challenges.

Type 2 research addresses these issues more directly and is, as noted, aimed specifically at elucidating the mechanics of societal transformation either on a broad comparative scale or on a single-case study approach. Such studies address directly questions of cultural practice and rationale. They draw conclusions about the ways in which premodern or traditional socio-ecological systems have responded to various types of long-term or short-term stress, or why some displayed greater resilience to different types of environmental challenge. Their relevance for contemporary policy and planning is largely as a context within which broader trends can be identified (e.g., Hegmon et al. 2018; Riede 2014; Vésteinsson et al. 2019), although they may suggest particular lessons about sustainability and resilience in specific regions and at particular times that might be relevant to the situation in those same regions today. A classic example might be imperial collapse, or cyclical change, from which the lessons that might be drawn depend entirely on the politics, ideology, and vested interests of those who "learn" them. (Tubi et al. 2022; Smith 2021; Degroot et al. 2021). These are substantial challenges to be met.

Type 3 studies are the most limited in scope but have thus far proved to be the most readily applicable because they are often clearly relevant to local stakeholder concerns, focusing as they do on a specific place or region, often across a limited chronological range, and on specific aspects of social organization, land-use and water-resource practice and sustainability, and risk management. This applies in particular, but by no means exclusively, to archeological studies, where projects involving historical, archeological, and paleoenvironmental research have in many cases had a direct impact on local planning and sustainability policy, in both Old and New World contexts (e.g., Koparal, Demirciler, and Turner 2022; Hartman et al. 2017; Hicks et al. 2016; Fields-Black et al. 2022). But while this is a significant development, there is as yet no general framework that brings such research to the attention of the wider policy-making community either nationally or internationally, so that such initiatives remain largely unknown outside their immediate local area of application.

## 3 | Ways Forward I: Expert Elicitation and Qualitative–Quantitative Data Integration

Evidence from well-researched historical cases in which specialists have reached a consensus can inform how people understand environmental stressors today, for example demonstrating how what a modern observer might consider an irrational reaction, could be entirely rational within the historical community's culture. Just as importantly, they can also demonstrate that even if not efficacious in combating or mitigating a challenge or threat as such, such practices can serve to reinforce community identities or broader ideological systems (Dawson et al. 2020). Well-intended policies today can meet with cultural resistance if they are not attuned both to such ideological systems as well as to the uneven power relationships in a society. Moreover, such policies could benefit by acknowledging that the least privileged in society tend to bear the greatest cost of societal responses to environmental threats both historically and in the present (Vargas Falla, Brink, and Boyd 2024; Brink, Varas Falla, and Boyd 2023; Ritvo 2022; Izdebski, Mordechai, and White 2018).

Argument by analogy, therefore, must have its place in the range of approaches we deploy to understand the relevance of past responses and outcomes to contemporary concerns—although simple analogical arguments can also be misleading because they tend to ignore fundamental structural and cultural differences between the past and present (Jackson, Dugmore, and Riede 2018; Meyer et al. 1998; Tubi et al. 2022; Wylie 1985). This makes a clear justification of the purpose of comparison and choice of case studies paramount.

Two approaches to overcome the shortcomings or enhance the benefits of the three functional types of historical research (Table 1) are structured expert elicitation and the development of repositories or databases of both qualitative and quantitative information.

Structured expert elicitation is a method that includes a collection of techniques for aggregating and improving collective expert judgment. A large body of evidence from studies of deliberative democracy (Landemore 2012), collective intelligence (e.g., Vercammen and Burgman 2019), and forecasting (Tetlock and Gardner 2015) all underpin the basic idea that a combined set of diverse expert opinions will, on average, result in better judgments than those of an individual. Sophisticated versions of the most well-known "Delphi" method have been used for an array of areas ranging from biosecurity to global health (Kemp et al. 2021; World Health Organization 2021). These are usually forward-looking "horizon-scans," but if they can be successfully used for a highly uncertain future, they are certainly relevant for the past.

The neglect of structured expert elicitation in historical case studies is surprising since it provides a way of incorporating many perspectives and sources of information without the standardization or homogenization that accompanies pure quantitative coding. It also reliably and transparently highlights not only points of convergence and agreement, but also uncertainty and disagreement. For instance, one study of global conservation used a form of expert elicitation to highlight where experts disagreed about a specific question and used this to put forward a new research agenda (Sutherland et al. 2019). Horizon-scans regularly reflect on areas of disagreement and depict the array of opinion on identified topics. In practice, this could be as simple as gathering a large group of historians, archeologists, geographers, and anthropologists together to anonymously propose and score their confidence in a host of different data points and hypotheses. An ensuing deliberation would help to map out points of convergence and divergence, and clarify the level of support for different theories and hypotheses.[2]

A second path is creating complementary repositories of data that combine both qualitative and quantitative material. The aforementioned Seshat Databank is the most comprehensive such as repository of synthesized information. Although it offers qualitative profiles of its different case studies as well as a large list of coded variables at a decent granularity, there are several areas for refinement. One is incorporating the most recent findings and keeping the data up to date. Another is drawing these together into a broader picture that accounts for uncertainty and disagreement among experts, for example, through expert elicitation. Other academic fields can help provide models for consistently updating databases, such as the Neotoma database which contains raw unsynthesized information and provides an accessible repository for a range of proxy datasets with quality assured by teams of data stewards (Goring et al. 2015). A historical equivalent that uses machine learning to continuously search for and identify new articles, convenes panels of experts to vet the selection, and provides a commentary on limits and how this data fits into the wider context of a case study would be invaluable.

## 4 | Ways Forward II: Case Studies of Policy Influence

As a more practical example of potential ways forward we focus in this section on two sets of linked case studies which represent aspects of Type 2 and 3 analyses in the schematic division above: the premodern East Mediterranean and North Atlantic. Both are based on the output of broad research groups and represent different stages of engagement with planners and stakeholders outside academia. The North Atlantic research group has been operating for over two decades, while the Eastern Mediterranean research group formed over the past decade.[3] As such, they can be seen as potential milestones that contextualize the attention and resources necessary to develop a broad group focused on a defined time and place that could inform policy. They also exemplify two different but complementary ways of thinking about how the past might contribute to understanding the challenges of the present. The East Mediterranean project, reflecting the integrated outcome of independent research initiatives, aims to construct a framework within which to situate historical knowledge relevant to the ongoing debate on environmental challenges while also being sensitive to policy concerns across the region. In contrast, the North Atlantic project represents a "co-creative" engagement with policy-makers and stakeholders from the outset that has led researchers to formulate their questions and methods also in response to the policy and development needs of the communities involved.

Both case studies are beneficial for reflecting on the theoretical relevance of the past for the present, thinking about societal responses to significant environmental challenges, and considering the configuration of the qualitative transformations that took place. From a methodological perspective, both projects have resulted in the accumulation of more robust environmental and social data in each area. From the perspective of questions about vulnerability, sustainability, and resilience, the two cases offer different exemplifications of the complexity of causal interrelationships across temporal and spatial scales. Each reveals which elements in its social system responded flexibly to stress, under what circumstances, and at what societal cost. Both case studies also highlight the role of cultural perceptions, habits, and responses in conjunction with both perceived and unseen challenges, exemplifying issues of belief and social praxis that remain highly relevant today.

### 4.1 | Case Study 1: The Eastern Mediterranean

The East Mediterranean project (henceforth EMT) focuses on some of the dramatic cultural and environmental

transformations in the region between the 5th and 17th centuries and their implications. One of the Type 2 analyses it examines, for example, scrutinizes how the eastern part of the formerly pan-Mediterranean Roman state unexpectedly recovered from the territorial losses and impacts of the early Islamic conquests during the 7th to 8th centuries.

A diverse range of sources informs this case study. These include different genres of writing and records, as well as many types of archeological evidence (including buildings) and material cultural data. More recently, a marked environmental perspective has influenced the debate, making the case study the locus of pioneering work in premodern environmental history (e.g., Harper 2017; McCormick et al. 2012). More focused studies (Type 3) have concentrated on smaller scales, contributing toward a better understanding of the processes of change across the Roman, Byzantine as well as Ottoman periods (e.g., Eastwood et al. 2009; White 2011). This has focused scholarly attention on topics such as the climatic and disease events that have been linked to the significant transformations that took place in the late Roman world (e.g., Büntgen et al. 2016; Sessa 2019). The increasing availability of high-resolution climate records (e.g., tree rings), coupled with the fact that techniques of both analysis and dating improve the data resolution of other types of archives such as lake sediments, has contributed to a marked shift in both archeological and historical writing toward long-term local and regional history. This, in turn, has encouraged an approach focused on how regional patterns contributed to the configuration of the broader system identity.[4] Alongside its own sub-projects (such as the Avkat Archeological Project, the Maeander Valley Project, and the new Lyrbe/Seleukeia Archeological Project), the EMT aims to integrate the many studies of this type under a common interpretive umbrella.[5] A key aspect in EMT research is the emphasis on human agency in responses to perceived social or environmental changes. The case study therefore underlines the ways in which contemporary observers understood how their world was changing around them (detailed analysis of some aspects of this in Haldon 2021).

While the extent of the EMT community's engagement with policy in the Eastern Mediterranean remains limited despite considerable investment of scholarly energy, observers should remain cognizant of the very different and sometimes difficult political contexts within which research or engagement takes place. Nevertheless, some progress can be registered through several Type 3 initiatives (specific case studies), some within the EMT umbrella:

1. Case studies of both the premodern water-supply system of Constantinople/Istanbul offer direct comparisons and potentially significant insights into the impact over the long term (the last 1500 years) of human management of local water resources. The ongoing project "Water in Istanbul: rising to the challenge?" has involved archeologists and historians together with government agencies and representatives from NGOs and the private sector.[6,7] There is scope here both for enhancing scenario development (Rounsevell and Metzger 2010) through historical research as well as for engagement with risk-assessment.[8]
2. The results of integrated research are also having an impact on farming strategies and agrarian planning, for example, in the case of the olive. In the case of the Maeander Valley Project paleoenvironmental work combined with historical evidence in SW Turkey has permitted the re-introduction of olive cultivation, a long-abandoned traditional crop, thus contributing to flexibility in production and investment to pre-empt adverse climatic impacts (England et al. 2021). It is evident that such research on the past can positively guide the present (cf. Kourgialas et al. 2022).
3. Other projects include similar outreach components. Current research on the island of Naxos and the Urla-Çeşme peninsula near Izmir in western Anatolia, has shown that different types of terraces were being constructed in the middle Byzantine period (c. 600–900 CE), with more intensive periods of construction in the following centuries (c. 1000–1600 CE) and continuing into the early modern period (Koparal, Demirciler, and Turner 2022; Turner et al. 2021). It seems that terraces provided a flexible and reliable land-use strategy throughout (Kourgialas et al. 2022). In this case, archeological/historical engagement with local communities has helped to highlight alternative landscape management strategies (Lekakis and Dragouni 2020; Turner et al. 2020).
4. Given recent Turkish governments' concern with reforestation, historical and paleoenvironmental data for landscape cover and land-use are of considerable interest, and indications of how landscapes were exploited in a sustainable manner in Byzantine and Ottoman times are proving to be important (e.g., Dunn 1992). A developing dialogue with regional government bodies and community organizations is one significant outcome of communicating the relevant research results to them.[9]

### 4.2 | Case Study 2: The North Atlantic Islands

The second case study examines a very different society: the North Atlantic Islands (henceforth NAI) between the 10th and 19th centuries, providing the basis for Type 2 and 3 (i.e., comparative and focused) analyses. At its highest watermark the Norse societies inhabiting these islands extended from modern Newfoundland in Canada, through Greenland and Iceland all the way to Scandinavia and modern-day Russia. The Norse world had considerably lower population and urbanism rates compared with the Eastern Mediterranean, but it maintained long-distance trade networks and a similar culture over multicentury timescales. Scandinavian settlement has varied from fleeting (Newfoundland), through that sustained for centuries but ultimately terminated (Greenland), to that which has endured to the present (e.g., Iceland and the Faroe islands). Different Atlantic island communities diverged in critical pathways in at least four historic junctures: their initial colonization; their response to the 13th to 14th century medieval proto-world system, disease, and climate change; their integration into early modern colonial empires c. 1500–1750 (including Greenland Inuit); and their development of intensive commercial fisheries (including Newfoundland and Grand Banks) with associated social and long-term environmental impacts c. 1600–1850 (See Dugmore, Keller, and McGovern 2007; Jackson et al. 2018; Lucas and Edwald 2015).

Although some of the islands in the North Atlantic have far less historical documentation than their EMT counterpart, the NAI has other advantages. High-resolution archeological excavations across the Norse world offer a more nuanced picture of how people coped with environmental challenges through adaptation and resilience. As a locus of environmentally related studies for decades, research coverage of the NAI is dense compared with the EMT.

Research in the NAI sphere has long been interdisciplinary and team-based. In recent years NAI research teams have taken on issues of island integration into European and global markets, multiple social and environmental impacts of the "fish revolution" after c. 1500, and of the different experiences of Danish and British imperial integration. These issues resonate with different aspects of 21st century life in the region, ranging from resource and land management through to the impacts of globalization, colonization, and climate change (Holm et al. 2022). The perceived greater vulnerability of the NAI to climatic perturbations has drawn attention to the role that climate may play in societal change. The impact of the medieval integration of the Viking Age island communities into the Norwegian Atlantic Realm in the 13th century and of the transition to Danish governance in the 15th century on the relations between local elites and production for market has been subject to several studies integrating documentary history, climate, and archeology (Hicks 2014; Júlíusson et al. 2019). Research on the interactions of export production and royal and ecclesiastical tribute-taking with local subsistence practice and management of commons (Hicks et al. 2016; Sigurðardóttir et al. 2019) offers to modern debates contributions about parallels of community-based versus topdown resource management over the centennial scale (Palma-Oliveira et al. 2018; Ostrom et al. 2002).

The NAI case includes the now classic (and still controversial) case of the 15th century end of the Norse Greenland settlement in comparison to the survival of the closely related Icelandic community despite the multiple challenges of the 18th "century of misery" (disease, climate, volcanic eruption, trade monopoly; see Dugmore et al. 2020; Jackson et al. 2018). Scholars working on the latter case study can engage with disaster management planners and communities trying to harden against unanticipated shocks without totally disrupting existing social–economic systems (Dugmore and Vesteinsson 2012; Dugmore et al. 2020). There is much potential in NAI case studies in using archeology and bioscience (stable isotopes, aDNA, trace elements, etc.) to look at human–animal interactions and address sustainable and unsustainable predation patterns (Hambrecht et al. 2020; Keighley et al. 2021). The interplay between very localized community adaptation and the global market economy in the 18th–19th century has also produced case studies of direct relevance to modern attempts to promote adaptive management and community-based engagement (Nelson et al. 2016). A good illustration of these points is the range of approaches with which scholars of the NAI case study engage with modern planners. These include:

1. Broadening the base of scenario-building exercises by expanding the breadth and time depth of cases of long-term human ecodynamics, identifying where possible recurring patterns of successful avoidance of "collapse" and patterns of risk and vulnerability shedding. Here the engagement is with policy-makers, environmental activists, and the disaster management communities (Jackson, Arneborg, et al. 2022; Jackson, Hartman, et al. 2022).
2. Expanding time depth to address "shifting baseline syndrome" (SBS; see Soga and Gaston 2018), a problem where humans infer an environmental baseline from shallow temporal observations. This can lead to actions that are based on misleading ideas of "natural" or "unimpacted" systems that are in fact already heavily impacted by outside factors (Hambrecht et al. 2020). The fisheries science community, among others, has identified SBS as a major problem in modern-day natural resource management (Pauly 1995). In the NAI case study projects inspired by the Maritime Historical Ecology community, (e.g., the Norfish Project), and the ongoing 4 Oceans Project (e.g., the Central North Atlantic Marine Historical Ecology Project) are endeavoring to generate long-term marine ecological datasets and to engage directly with maritime resource managers and oceanographic communities.
3. Learning what management structures have proven robust (or not) in preserving resources, ecosystems, or biodiversity on the century scale. This is illustrated by the history of successful millennial-scale duck conservation in Iceland, connected to a larger wetlands management community (Brewington et al. 2015; Hicks 2019). The successful, multicentury management of bird populations is the sort of project that particularly interests scenario builders, while it also represents the sort of contribution that holders of local traditional knowledge can make to modeling sustainable futures (Sigurðardóttir et al. 2016, 2019).

## 5 | Ongoing Challenges

The mechanics of links between environmental stress factors and societal developments are difficult to establish beyond the micro-level (Type 3 analyses above). There is also a paucity of formal theoretical models to guide the interpretation and/or recognition of potential causal links, as well as substantial regional variation in the availability or existence of documentary records which hinders the establishment of a sequence of events.[10] Extrapolating from the level of very detailed historical–archeological analysis to the broader picture to draw more generalizable and robust conclusions remains a major challenge. Our case studies illustrate aspects of this, although causal relationships are easier to trace in the case of the NAI (Crabtree et al. 2023; Haldon, Elton, and Izdebski 2022; Haldon et al. 2022; Haldon 2021).

The EMT provides policy lessons at two quite discrete scales: the broader state (or societal) level, and the more restricted community level, each of which raises different ethical questions about how lessons from history may be (ab)used. At the larger scale the analysis shows how a state can be resilient, yet also raises the question of the burden of resilience and whether "resilience" is desirable or not. An autocratic political system may well derive lessons from the past that help it endure, although this may not necessarily be to the advantage of the population as a whole. In the EMT case, state-level resilience over both the Byzantine

and Ottoman imperial systems depended upon tight centralized control over provincial elites, ideological cohesion, and identity, together with an uneven distribution of the associated burdens. The results can be seen either as a playbook for autocrats or, indeed, guide to reformers.

At the more local scale, research outputs relevant to sustainable ecological management can have traction across the political spectrum and seem to stem particularly from such "Type 3" studies, with only indirect connection with the strategic level of maintenance of political power structures (Kaptijn 2018). Although we cannot use knowledge of a premodern thought-world to gain insight into contemporary culture in any positivistic sense, it is nevertheless possible to argue on analogy what sort of attention needs to be paid to popular ideas and (mis)conceptions in explaining and presenting policy, especially since contemporary risk assessment strategies have until recently failed to consider cross-sectoral impacts of environmental challenges. This misrepresents both patterns as well as the direction and magnitude of impacts. Failing to take account of the complex interdependencies within human and environmental systems, and the unpredictability of societal responses leads to more serious failures in both risk-management and sustainability planning. These issues resonate directly with the same themes in the modern world (e.g., Hanna, White, and Glavovic 2021; Harrison et al. 2016).

## 6 | Conclusion

Historians understand that their research cannot usually produce the certainties sought by policy-makers. Generating big data projects (Type 1) can detect repeated patterns, help isolate regularities in societal relationships and serve as a broad foundation to theorize potential future developments, although this still lacks granularity. Analogical and comparative arguments offer an alternative strategy, exploiting a narrower, highly specific set of case-studies (Type 3) orientated around a set of shared questions and methodological principles of analysis (Type 2). Such studies can inform local- and regional-level collaborative action involving academic, policy and planning aspects.

Whether or not politicians and policy-makers read history, historians are rarely present at the policy table because they are not always seen as a legitimate source of expertise on socio-ecological issues, while their cultural/political standing in this respect is considerably lower than that of the natural sciences. This is the main challenge we face today in making historical research more relevant to the world of practical policy, through a rigorous understanding of historical antecedents and their value. If historians want to engage with socio-ecological policy and communities then they need to initiate the contact and they need to present their findings in an accessible and above all usable format, as our case-studies indicate. The potential of historical/archeological study needs to be framed in a way that highlights its relevance and published in appropriate policy-focused media (Opitz et al. 2021; Kaufman, Kelly, and Vachula 2018).[11]

Yet how "relevance" is understood is a point for debate. Whatever historians may assume, we cannot expect those concerned with policy to assume the same, where "relevance" as often as not means "actionable." We know that history can have enormous persuasive power. We know that narrative and story-telling are important and well-tried tools of communication, with policy-makers and politicians as much as with the wider public. But policy specialists must be able to recognize quickly the possible relevance a historical research project may have to their own, immediate concerns; working collaboratively with historians, starting from the present and working back is the best approach through which to engage interest. This must be done sensitively, with an eye to the cultural and political contexts in question.[12] Our examples indicate that this is an effective approach that can have impressive positive outcomes (see, e.g., Fields-Black et al. 2022; Fairclough et al. 2020).

### Author Contributions

**John Haldon:** conceptualization (lead), funding acquisition (lead), investigation (equal), methodology (equal), project administration (lead), supervision (equal), writing – original draft (lead), writing – review and editing (equal). **Lee Mordechai:** conceptualization (equal), funding acquisition (lead), investigation (lead), methodology (lead), project administration (lead), supervision (lead), writing – original draft (lead), writing – review and editing (lead). **Sarah Metcalfe:** writing – original draft (equal). **Andrew Dugmore:** writing – original draft (supporting). **Merle Eisenberg:** writing – original draft (supporting), writing – review and editing (supporting). **Georgina Endfield:** writing – original draft (supporting), writing – review and editing (supporting). **Adam Izdebski:** conceptualization (supporting), writing – original draft (supporting). **Rowan Jackson:** writing – original draft (supporting). **Luke Kemp:** writing – original draft (supporting). **Inga Labuhn:** writing – original draft (equal). **Thomas McGovern:** writing – original draft (equal). **Kathleen D. Morrison:** writing – original draft (supporting). **Timothy Newfield:** writing – original draft (supporting). **Benjamin Trump:** writing – original draft (supporting).


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### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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Politics of attributing extreme events and disasters to climate change

### Endnotes

[1] See, for example, Nelson et al. (2016), Spielmann et al. (2016), Turchin et al. (2017), and http://seshatdatabank.info/seshat-projects/crisis-and-recovery-database/consequences-of-crisis/.

[2] This would be to a large extent a use of the Investigate, Discuss, Estimate, Aggregate (IDEA) protocol. See Hanea et al. (2018).

[3] For the core members of the East Mediterranean group: https://climatechangeandhistory.princeton.edu/; for the core members of the North Atlantic group: https://www.nabohome.org/.

[4] A considerable number of local/regional studies in both Greece and Turkey, for example, illustrate this trend, in which archaeological, historical, and paleoenvironmental data is integrated to generate a holistic picture of a specific region or locality over the longer term. Such research must form the basis for any larger-scale account of the period and region in question. See, for example, the case studies presented in Roosevelt and Haldon (2022), Niewöhner (2017), and Steadman and McMahon (2015).

[5] See https://history.princeton.edu/centers-programs/center-collaborative-history/special-projects/past-projects/avkat; https://climatechangeandhistory.princeton.edu/initiatives-and-projects/princeton-isparta-max-planck-meander-valley-project. The Lyrbe/Seleukeia Archaeological Project is in collaboration with the Universities of Frankfurt and Istanbul.

[6] Organized by the British Institute at Ankara: https://biaa.ac.uk/research/water-istanbul/. See, for example, Crapper et al. (2022) and Crow (2018, 2023).

[7] See, for example, Pickett (2020). For the late Ottoman period: Çelik and Luke (2021).

[8] Thus the project on the management of water resources in the greater Istanbul region involves planners and representatives from the Ministry of Agriculture and Forestry, various departments of the Istanbul Metropolitan Municipality, the Istanbul Water and Sewerage Administration and a number of NGOs (see *Water Storage & Rainwater Harvesting* (*Water in Istanbul: Rising to the Challenge*, 2nd Workshop Report) (Istanbul 2022)).

[9] See, for example, the projects on population sustainability within the Sagalassos Project: https://www.arts.kuleuven.be/surplus; and on water management, run by Süleyman Demirel University. (Isparta, Turkey) in collaboration with Plymouth University: https://www.plymouth.ac.uk/research/centre-for-research-in-environment-and-society-ceres/water-security-in-the-agricultural-landscapes-of-turkey.

[10] For a basic but useful model: Ljungqvist, Seim, and Huhtamaa (2021).

[11] Altschul et al. (2017), Gaillard-Lemdahl et al. (2018), Harrison et al. (2020), Hartman et al. (2017), and Jackson et al. (2018). These issues were discussed in detail at a workshop organized by the *International Panel on Environmental History & Policy*, with substantial input from policy-advisers as well as historians and archaeologists involved in environmental historical research (https://envhist4p.org/) in 2022: https://envhist4p.org/workshops/workshop-environmental-history-meets-public-policy/.

[12] Cf. among a number of examples: Rockman and Steele (2003) and Turner et al. (2020), and the US National Parks Service *Cultural Resources Climate Change Strategy* https://www.nps.gov/subjects/climatechange/culturalresourcesstrategy.htm. For two helpful policy briefs, see: https://arreaproject.files.wordpress.com/2017/11/01-aarea-policy-brief-no-1-terraces-are-good-but-sometimes-sediment-traps-are-better.pdf; https://eprints.whiterose.ac.uk/193145/.

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