

## Leverhulme Doctoral Scholarships Programme for Interdisciplinary Resilience Studies (PIRS) University of Southampton

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**RECRUITMENT CYCLE for studentships starting: October 2025 (Cohort 2)**

### **SUPERVISORY TEAM**

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### **STUDENTSHIP PROJECT TITLE**

The Environmental Impact of Changes to Religious Practices in Roman Britain

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### **OVERVIEW**

How did past societies navigate cultural and environmental change? This project investigates the environmental impact of new religious practices during the Roman period in Britain, integrating scientific archaeological analysis of plant remains to uncover on-the-ground environmental changes, and philosophical analysis regarding the evolving conceptualisation of “nature” during this transformative period.

### **SUMMARY**

Given the environmental crises we face, many theorists and campaigners argue that we urgently need to re-evaluate our relationship with the nonhuman environment. But how do we encourage such large-scale cultural change? One strategy is learning from historical periods in which rapid cultural shifts resulted in different conceptualisations of nature, land-use, and stewardship. This study examines one underexplored example: environmental changes that occurred amid the social upheaval of the Roman invasion and settlement of Britain (c.43–410CE).

How did the conceptualisation and management of nature change during the Roman period, and what lessons can be applied to our current context? To answer these questions, this project combines environmental archaeology and philosophy. Environmental archaeology involves the scientific study of past environments through plant and animal remains, and environmental philosophy critically examines the concepts we use to think about and engage with nature.

The project also addresses a significant gap in the literature. The details of environmental changes and transformations during the Roman period are often oversimplified or generalised and would benefit from more nuanced, context-specific analysis. This project particularly focuses on the significant transformation in religious practices during this period – from ritual depositions in natural water bodies, towards more monumental, temple-centred systems of religious practice.

As such, the project will contribute to reshaping the environmental history of the Roman period in Britain, and – through examining how past societies navigated environmental change and resource use – also offer insights into how we tackle contemporary challenges of environmental sustainability, cultural integration, and landscape preservation.

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## **PROJECT CONCEPT**

### **Rationale:**

The Roman period in Britain was transformative in multiple ways. The invasion in 43 CE led to broad social shifts, in diet, settlement patterns and routeways, in local and broader economic change (including the widening of the monetary economy and the payment of taxes or tithes to a central administration), and in religious practices. The environmental changes that also took place during this period have not been subject to comprehensive study, especially in relation to the significant changes in religious practices and conceptualisations of the divine that occurred between the Iron Age and Roman periods. Gaining a rounded picture of the environmental shifts that occurred at a localised scale (in relation to religious practices and monumental building construction) will inform us about questions of domination, legitimisation, and social resilience in relation to the social ruptures brought about by the Roman invasion.

### **Key Objectives:**

1. Conduct a comparative analysis of environmental data from both religious and secular sites to identify differences in resource use and environmental interactions specific to non-secular activity.

2. Examine whether environmental practices associated with Roman temples reflect any forms of environmental stewardship, conservation, or land management.
3. Explore how concepts of nature and relationships with the non-human environment changed through the Roman period, and what impact this had on environmental behaviours.
4. Assess the sustainability of resource use associated with Roman-period monumentalised temples, focussing on the extent and ecological impact of gathering materials for use in non-secular contexts.
5. Investigate the ways in which local flora impacted and were impacted Roman period religious practices. This includes:
  - a. Investigating how non-secular activities influenced surrounding plant communities and ecological diversity;
  - b. Undertaking novel investigation into the types of plants used in Roman rituals, by extracting phytoliths from archaeological objects; and
  - c. Exploring how regional environmental conditions and local ecological practices influenced environmental interactions at temples.
6. Identify any features of the cultural and environmental change during this period which could inform contemporary transitions to more environmentally and socially resilient frameworks.

## **Methods:**

The first step in the project is to identify several monumentalised Roman period temples across Britain, covering both urban and rural areas to capture regional diversity in ecological practices and religious activities. We will also identify other places of ritual significance which were not monumentalised to explore issues of legitimisation of practices. These will be compared with nearby secular Roman sites, such as domestic and/or industrial to serve as controls, allowing for comparative analysis of environmental proxies between ritual and non-ritual contexts.

The project will employ a diverse set of techniques and strategies from environmental archaeology. The first step of the analysis will be to leverage existing data, by identifying existing knowledge, data, collections, and environmental samples for synthesis.

The second step of the analysis will be to begin environmental sampling. This will entail achieving permissions to collect data from various sites, which will be applied for during the early stages of research. We will collect stratified soil samples from temple sites, and if viable, analyse pollen to reconstruct vegetation changes over time. We will

analyse charcoal samples from fire-related contexts to identify fuel sources and ritual burning practices, and analyse macrofossil remains.

Phytolith Analysis forms the final part of the environmental analysis. We will identify and choose archaeological objects with potential for phytolith extraction (ceramics, stone etc.). We will ensure that the sample selection includes a variety of contexts within the temple or secular site. We will then extract phytoliths and collect control samples from non-ritual objects to differentiate between ritual-related and incidental contamination and analyse the extracted phytoliths under a suitable microscope to identify plant taxa. Findings will be compared against an existing reference collection to determine species.

### **Wider implications:**

The project offers a comprehensive investigation into the ecological implications of Roman period religious practices through the lens of environmental archaeology. By employing advanced methodologies such as pollen and phytolith analysis, this research will illuminate the complex interactions between Roman temples and their surrounding landscapes. The anticipated findings will provide significant insights into vegetation changes associated with the establishment of temples, revealing shifts in local ecosystems before and after these sites were constructed. Analysing resource management practices will shed light on how temples influenced local communities, including the sustainability of materials gathered for construction, ritual activities, and daily life.

It also stands to make a novel contribution to the field of environmental archaeology by employing innovative techniques for phytolith extraction from archaeological objects. This methodological advancement will enhance the understanding of the plant species used in ritual practices, thereby linking botanical data directly to the cultural and religious activities of the Romans.

Moreover, the exploration of socio-ecological interactions will elucidate the broader environmental impacts of Roman period temple activities, including potential deforestation, soil health deterioration, and alterations in land management practices. By contextualising these findings within regional and temporal frameworks, the research will highlight the varying environmental impacts and resource management strategies across different areas in Britain. This work will also demonstrate the practices that were legitimised in this colonial context and those that were not and contribute to the discussion about the philosophical or conceptual changes that were also happening in terms of the understanding of nature and of the divine.

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**Please explain how this project represents a contribution to interdisciplinary resilience studies.**

British colonization has been a major contributor to environmental destruction and biodiversity loss across the world, as indigenous and sustainable ways of life were replaced with large-scale agriculture, farming, and land-ownership. Now the attempt to find more sustainable ways of managing land often appeal to these indigenous worldviews and practices as examples. But such practices are highly context and place-specific and cannot be transposed to other cultures. What if we could look back in time, and learn from our own indigenous past?

This project explores what indigenous practices of land-management looked like in Britain before Roman colonization, and how they shifted and altered in the face of Roman occupation. In particular, the focus will be around religious worship and environmentally relevant activities around temple-sites. In so doing, the project explores how cultural shifts historically drive environmental changes, and explores how traditional environmental stewardship models of Britian were altered in the face of Roman occupation.

These lessons from the past will contribute to interdisciplinary resilience studies by providing a deeper-time picture of environmental change and responses to change, offering examples to learn from as for our own modern shift to more sustainable methods of land-management. The project will focus on how people respond to social rupture – here the invasion and occupation of the Romans; the role which culture plays in changing our beliefs and practices in relation to environmental systems; and how cultural practices interact with natural processes and landscape change.

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**Please list and describe any specific/additional technical training or support to undertake and successfully deliver this project.** *Note that students recruited into this programme will undertake a bespoke training curriculum. Students and their supervisory teams will also identify generic skills gaps to address through training courses offered by the University's Doctoral College.*

**1. Coring and Environmental Sampling**

Technical training will be required for sampling strategies of various environmental contexts and archaeological deposits. This should include the use of suitable augers.

**2. Environmental Proxy Analyses**

Technical training will be required in the analysis and identification of the following environmental proxies:

- Palynological samples (pollen)
- Phytoliths
- Charcoal
- Macrofossils

Statistical analysis and data visualisation is a key element of proxy analysis and will, therefore, also be an important aspect of training.

### **3. Microscopy**

Environmental proxies will be analysed and identified using appropriate microscopes with magnification ranges between 400x – 1000x depending on the proxy. Technical training on the use of light (optical) microscopes will be necessary.

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