

Exploring the secrets of the Roman Empire's leather economy

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A pioneering research project is expected to challenge current understanding of the [leather economy of the Roman Empire](#), which has received little attention despite being central to ancient civilization, from military logistics to trade and daily life. This three-year project, led by Teesside University, will explore how to understand the production, distribution, and use of leather in ancient Roman territories, addressing long-standing gaps that have resulted from the poor survival of organic materials in the archaeological record.



Roman shoes from Vindolanda on display in the museum. Credit: [Victuallers](#) / [CC BY 4.0](#)

The research will be conducted by Dr. Gillian Taylor, an associate professor at Teesside University's School of Health and Life Sciences, together with other specialists from University College London, Western University in Canada, and North Carolina State University in the United States. The project is the first large-scale biomolecular investigation of [Roman leather artifacts](#).

The researchers will combine cutting-edge scientific approaches, including ancient DNA analysis, with archaeological and historical expertise. The examination of leather objects from important Roman sites in Britain, the Netherlands, and Syria is expected to determine which animal species were used, their sex, and even their geographical origins. It would then be possible to reconstruct patterns of animal husbandry, manufacturing practices, and supply networks that sustained both military and civilian life throughout the Empire.



Sandal found at Vindolanda, now on display in the museum. Credit: [Colgill](#) / [CC BY-SA 4.0](#)

This study centers on Vindolanda, [a Roman fort near Hadrian's Wall](#) in England, which preserves the largest known collection of leather artifacts from the Roman era. The waterlogged conditions at this site have produced shoes, tents, bags, and other items that rarely survive elsewhere. Additional data will come from other excavations, such as those at Trimontium in Scotland and Valkenburg or Vechten, both Roman settlements in the Netherlands, allowing regional comparisons of both production and consumption practices.



reproduction of a Roman caliga. [CC BY-SA 3.0](#)

This work is conducted in close collaboration with the Vindolanda Trust, the National Museum of Scotland, and the National Museum of Antiquities in the Netherlands. All partners provide access to their collections and assist in public engagement activities that help share these findings with international audiences. The researchers will link scientific data with historical models to build a picture of how people across the Roman world lived, worked, and adapted to their respective environments.

Apart from its historical significance, the study also has modern applications. Climate change is accelerating the deterioration of archaeological sites, especially those that contain delicate organic materials such as leather. This study's results should offer insights into approaches that should be taken today for the identification, recovery, and conservation of leather artifacts before they are lost.

More information: [Teeside University](#)