


# News

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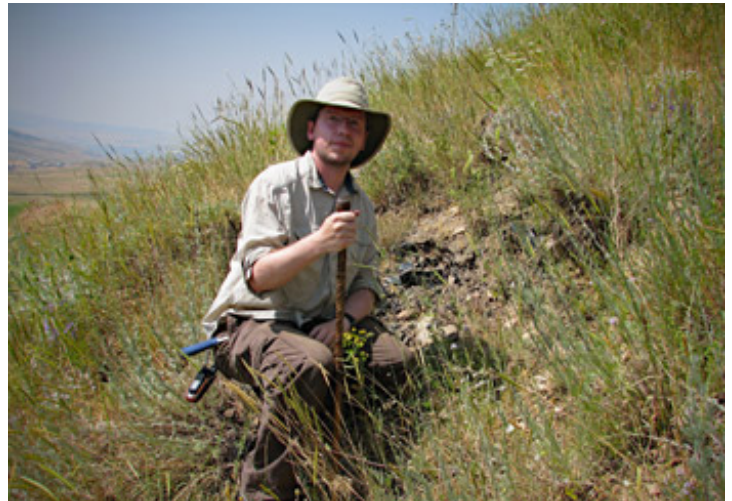
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## Research finds crisis in Syria has Mesopotamian precedent

**Research carried out at the University of Sheffield has revealed intriguing parallels between modern day and Bronze-Age Syria as the Mesopotamian region underwent urban decline, government collapse, and drought.**

Dr Ellery Frahm from the University of Sheffield's Department of Archaeology made the discoveries by studying stone tools of obsidian, razor-sharp volcanic glass, crafted in the region about 4,200 years ago.

Dr Frahm used artefacts unearthed from the archaeological site of Tell Mozan, known as Urkesh in antiquity, to trace what happened to trade and social networks when Bronze-Age Syrian cities were abandoned in the wake of a regional government collapse and increasing drought due to climate shifts.



Dr Ellery Frahm

"Unfortunately," explained Dr Frahm, "the situation four thousand years ago has striking similarities to today. Much like the fall of the Akkadian Empire, a governmental collapse is a real possibility in Syria after nearly two years of fighting. Some archaeologists and historians contend that the Akkadian Empire was brought down by militarism and that violence ended its central economic role in the region.

"Additionally, farming in north-eastern Syria today relies principally on rainfall rather than irrigation, just as in the Bronze Age, and climate change has already stressed farming there. But it isn't just climate change that is the problem. Farming, rather than herding, has been encouraged at unsustainable levels by the state through land-use policies, and as occurred during urbanisation four millennia ago, populations have dramatically increased in the area."

The diverse origins of the obsidian tools, which date from the rise of the Akkadian Empire in Mesopotamia to several centuries after its fall, revealed how social networks and trading routes evolved during this period.

Dr Frahm explained the motivation behind the research: "This time of transition in Mesopotamia has received great attention for the concurrence of aridification, de-urbanisation, and the decline of the Akkadian Empire about 4,200 years ago. However, our current understanding of this 'crisis' has been almost exclusively shaped by ceramic styles, estimated sizes of archaeological sites, and evidence of changing farming practices. Trade and the associated social networks have been largely neglected in prior studies about this time, and we decided obsidian was an ideal way to investigate them."

Obsidian, naturally occurring volcanic glass, is smooth, hard, and far sharper than a surgical scalpel when fractured, making it a highly desired raw material for crafting stone tools for most of human history. In fact, obsidian tools continued to be used throughout the ancient Middle East for millennia beyond the introduction of metals, and obsidian blades are still used today as scalpels in specialised medical procedures.

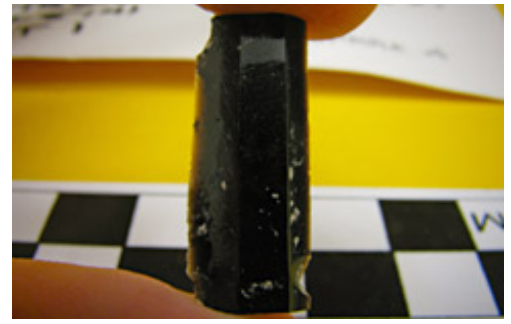
“Our discovery that obsidian in Urkesh came from six different volcanoes before the crisis, whereas they normally came from just two or three at surrounding sites, implies that Urkesh was an unusually cosmopolitan city with diverse visitors, or visitors with diverse itineraries. During the crisis, however, obsidian only came from two nearby sources, suggesting that certain trade or social networks collapsed. It was two or three centuries before diverse obsidian appeared again at this city, and even then, it came from different quarries, signalling the impact the crisis had on trade and mobility throughout the wider region.

“One compelling interpretation of our findings is that the regional government of the Akkadian Empire shaped Urkesh’s local economy. This city might have specialised its economy in response to demand from the Akkadians for certain commodities, such as metals from the nearby mountains. With climate shifts and the end of the empire, Urkesh’s inhabitants might have had to refocus their economy on local production and consumption, covering their own needs rather than engaging in specialised long-distance trade.

“By drawing these parallels to the current situation in Syria, we are not making light of it,” explains Dr Frahm. “Quite the opposite. The situation in Syria is heartbreaking, horrifying even when I see the images from Syria via social media. As an archaeologist, there is nothing that I can do to help the situation right now. But those of us who study people and the past are in a unique position to consider what could happen after the immediate crisis ends. What happens to cities when a state falls? How do the residents sustain themselves if that infrastructure collapses? Will they move to another area? Droughts are known to increase wars. As climate change increases, could fighting start again over scarce water resources? This is the type of contribution that archaeology can make towards improving the future.”

Dr Frahm’s team used a variety of scientific techniques to analyse the obsidian artefacts, including an electron microscope outfitted for chemical analyses, a handheld chemical analyser that can be used at archaeological sites, and a series of sophisticated magnetic analyses at one of the world’s best facilities for studying rock magnetism, the Institute for Rock Magnetism at the University of Minnesota.

The paper, entitled *Environment and Collapse: Eastern Anatolian Obsidians at Urkesh (Tell Mozan, Syria) and the Third-Millennium Mesopotamian Urban Crisis*, has been published online by the *Journal of Archaeological Science* and is available here: [Journal of Archaeological Science](http://www.sciencedirect.com/science/article/pii/S0305440312005213)  
[\[http://www.sciencedirect.com/science/article/pii/S0305440312005213\]](http://www.sciencedirect.com/science/article/pii/S0305440312005213)



Obsidian blade

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## Additional information

To find out more about the Department of Archaeology at the University of Sheffield, visit:  
[Archaeology \[http://www.shef.ac.uk/archaeology\]](http://www.shef.ac.uk/archaeology)

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