

# Documenting the Cultural Heritage of Mosul, Iraq Using ArcGIS Online

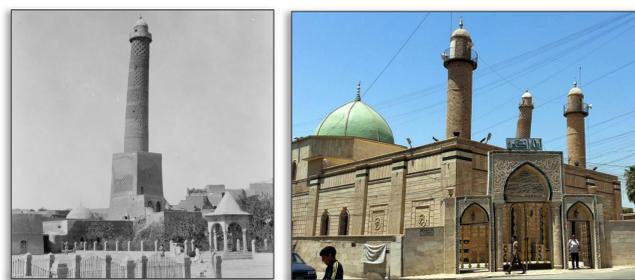
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## BACKGROUND

Until the end of the 20<sup>th</sup> century, Mosul, Iraq was a city known as one of the most diverse places in the Middle East, known for a mixture of citizens and cultures ranging from Christians, Jews, Sunni and Shi'i Muslims, Kurds, Turkmens, Assyrians, and others. Its neighborhoods, cultural sites, architecture, and archaeology reflected that.

Systemic and targeted violence against cultural heritage sites by ISIS between 2014-2017 have destroyed scores of cultural heritage sites in Mosul dating back as early as the 12<sup>th</sup> century. All but one have had religious significance to the residences of Mosul.

## USING GEOSPATIAL TECHNOLOGY



The Great Mosque of al-Nuri & its minaret, the al-Hadba' in 1932 (left) & 2017 (right)  
Credit: Library of Congress (left); STR/EPA/FILE (right)



Great Mosque of al-Nuri after it was destroyed by ISIS (Credit: ALAMY (left); Felipe Dana/Associated Press (right))

Geospatial expertise has been selectively applied in the fields of geography, urban studies, and archaeology, and attempts have been made to coordinate and share data between fields, but these approaches have not been applied to post-conflict situations or used across disparate fields of inquiry to support communities in reconstruction. We're providing a **cloud-based central geodatabase** of destroyed and reconstructed shrines that **supports real-time, offline, and mobile mapping capabilities**.

**Consolidating knowledge** of an area while **increasing the accuracy and availability** of this data is dependent on **developing, adapting, and sharing** common geospatial tools and studying how the availability and continual adaptation of collected data can support a more **unified framework** for reconstruction efforts across fields and among the many NGOs that often take part in reconstruction efforts.

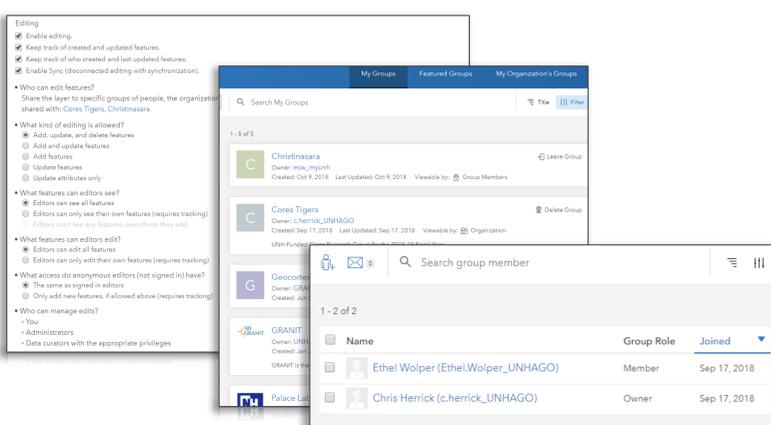
Not only does this project **help Mosulis recover their lost history**, it employs a convergence approach that merges techniques from geospatial information sciences with analytical tools from area studies and the humanities. This work provides a baseline from which community leaders can take part in creating an accurate, integrated base of knowledge for heritage sites and infrastructure, enabling local involvement in community and social resilience. Ultimately, this work will become available for the broader research community such as the University of Mosul, the Smithsonian Institute, the University of Pennsylvania, Duke University, and others.



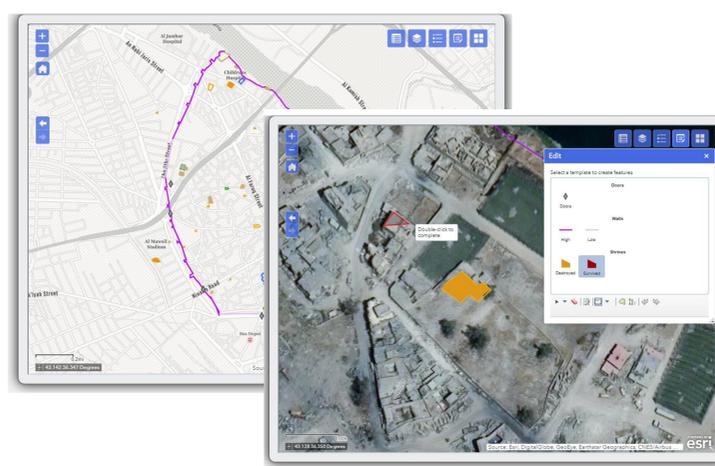
Archaeologists and cultural experts from the University of Mosul & University of Penn  
(Credit: Michael Danti)

## CREATING THE DATABASE

An ArcGIS Online "Creator" User is needed with a "Publisher" Role. This permits creation of content, editing, and publishing. Members are invited, content is shared, and editing privileges are controlled.

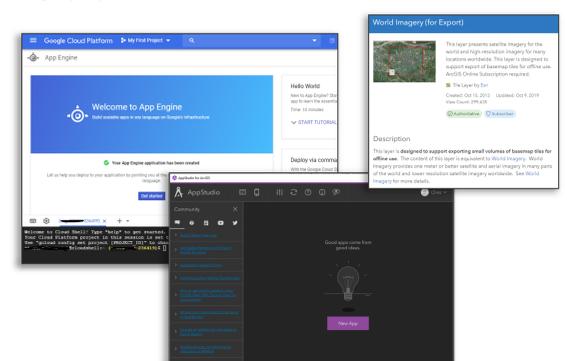


Apps can be used on mobile devices using Collector for ArcGIS. Custom web apps can be made; coding can be utilized but is not needed.



## NEXT STEPS

- Switching stock basemaps for custom hosted imagery on Paas or IaaS (Google, AWS, etc)
- Publishing the web app through Apple's App Store & Google's Play Store



The ruins of Mosul's Old City, July 9 2017 (Ahmad Al-Rubaye / AFP/Getty Images)

