Excavations at Tel Kabri, Israel: A Case Study in Data Management for Archaeological Research

Elizabeth Christian
Simmons College, Graduate School of Library & Information Science

Follow this and additional works at: http://escholarship.umassmed.edu/escience_symposium

Part of the Scholarly Communication Commons

This work is licensed under a Creative Commons Attribution-Noncommercial-Share Alike 4.0 License.

http://escholarship.umassmed.edu/escience_symposium/2016/posters/11

This material is brought to you by eScholarship@UMMS. It has been accepted for inclusion in University of Massachusetts and New England Area Librarian e-Science Symposium by an authorized administrator of eScholarship@UMMS. For more information, please contact Lisa.Palmer@umassmed.edu.
ELIZABETH CHRISTIAN, SIMMONS COLLEGE, SCHOOL OF LIBRARY & INFORMATION SCIENCE

chrise@simmons.edu

EXCAVATIONS AT TEL KABRI, ISRAEL
A CASE STUDY IN DATA MANAGEMENT FOR ARCHAEOLOGICAL RESEARCH

OBJECTIVE
This case study aims to identify data management needs in archaeological research by examining one project's current practices.

CONTEXT
Tel Kabri was a Middle Bronze Age palace near the Mediterranean coast. Excavations started in the 1980s, and apply a range of technologies and methods to gain a holistic understanding of daily life and trade at Kabri.

MODULES FOR RESEARCH DATA

- Types, Formats, and Storage of Data
  - Data stored in paper notebooks, databases, and spreadsheets
  - Extremely large quantities of raw and processed data

- Data Storage, Backup, and Security
  - Strict long-term data storage requirements from Israel Antiquities Authority, which pose access issues

- Data Sharing & Reuse Policies
  - Use of cloud-based applications for data sharing

Repositories, Archiving, and Preservation
- Need to digitize data from 30+ years and standardize formats
- Material will be permanently held by foreign government agency

METHODS
An interview instrument, based on the Digital Curation Centre’s Checklist for a Data Management Plan 4.0, was developed and used in an interview with lead staff to focus on understanding the project's data workflow throughout the data lifecycle.

ARCHAEOLOGICAL RESEARCH PRODUCTS

Documents
- Field reports
- Articles and presentations
- Lab notes

Data Sets
- Artifact catalogs
- Locus sheets
- C-14 dating results
- Chemical analysis results

Images
- Photographs & orthophotographs
- Technical drawings
- Artifact illustrations

Virtual Archaeology
- Remote sensing data (e.g., LiDAR)
- 3D scans and models
- GIS datasets

Cultural Material
- Pottery sherds
- Mosaics
- Reconstructed vessels

ARCHAEOLOGICAL DATA WORKFLOW

Data Collection In the Field
- Locus data recorded in Excel, accessed on a tablet and stored in the cloud
- Architectural features are excavated, numbered, and drawn to scale
- Files are synced twice per day using mobiles as hotspots for offsite collaborators to use
- High-resolution images (up to 1,000/day) are taken and later transferred to portable hard drives
- Artifacts are collected, labeled, and sent to onsite lab
- Samples for residue analysis, floatation, and dating are collected, labeled, transported to the onsite lab

In the Onsite Lab
- Graduate students build excel spreadsheets to catalog artifacts
- Artifacts pre-processed for laboratory analysis

Post-Excavation
- Artifacts processed; packed for storage and preservation
- Selected vessels reconstructed
- Data from across seasons is reviewed, compared, and analyzed

Consultation
Specialists produce additional data from remote sensing, chemical analysis, 3D modeling, and dating.

RECOMMENDED DATA MANAGEMENT PLAN

- Types, Formats, and Stages of Data
  - Data will be imported to software that can manage multiple file types, assign metadata, and provide versioning control

- Data Storage, Backup, and Security
  - All data will be duplicated and stored in a U.S.-based repository or cloud-based storage service

- Data Sharing & Reuse Policies
  - Re-use is subject to approval of the PIs and may be requested by contacting the PIs or the Israel Antiquities Authority

Repositories, Archiving & Preservation
- Data in paper notebooks will be digitized
- Data will be stored in open-source formats where possible
- Israel Antiquities Authority will be responsible for storing, archiving, and preserving all materials

CONCLUSIONS
Archaeology as a discipline is centered on the importance of context and data preservation. Partnering with archaeologists may allow LIS professionals to pursue a model for global data services that addresses the complexities of collecting data in foreign countries, incorporating legacy data, and preserving multiple data types.

ACKNOWLEDGEMENTS
- Alex Ratzlaff & the Tel Kabri Archaeological Project
- Elaine Martin, Regina Fisher Raboin & Julie Goldman, Simmons LIS 432G

PUBLICATION
- Preliminary field report written and published on institutional website
- Season reports and copies of collected data submitted to Israel Antiquities Authority as required by permit
- Articles written and submitted for publication
- Data made available to other researchers upon request
- Funding applications for the next season submitted