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THE INDEX OF TEXAS ARCHAEOLOGY

OPEN ACCESS GRAY LITERATURE FROM THE LONE STAR STATE

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Cultural resources management (CRM) reports represent a rapidly growing proportion of our knowledge associated with archaeological undertakings in the United States. Historically, these reports were printed in limited numbers and distributed to a few libraries and individuals, and few were distributed beyond the political boundaries of any given state. Libraries on the distribution list are reticent to allow patrons to check out these reports due to the fact that they have—and will only ever have—a single copy. Late in 2009, the Texas Historical Commission (THC) permitting guidelines for CRM reports were updated, requiring CRM contractors to submit a digital copy of a redacted (no site locations or photographs of human remains) report before their permits could be closed. These reports, the lion's share of which were funded with public monies, were meant to be made publicly accessible and should be available.

But like many agencies, the THC suffered significant budget cuts during the recent recession, and many of the staff at the agency, as well as a number of projects—including distribution of the redacted digital reports—had to be let go. At the same time, universities began to greatly expand their digital footprints, actively seeking projects that could expand their research capacities. To date, the CRM literature continues to be produced digitally, but with an even more limited distribution, and this body of knowledge remains mostly invisible in terms of public and academic publishing.

In the summer of 2015, while working on a project in the Texas Panhandle, we discussed the deficit of knowledge that many CRM practitioners are confronted with on a regular basis due to the lack of digital distribution. Further, we noted that a number of CRM firms have grown rapidly over the past 20 years, and many now represent regional, national, and even global conglomerates that employ staff who lack long-term, detailed experience in local archaeology. For that matter, even local CRM practitioners have a difficult time staying current with the results of CRM investigations. Among the most significant challenges for these groups is producing a meaningful report of findings, all the while having extremely limited access to the rich and extensive knowledge-base for a given region. To start to address this problem, we created the Index of Texas Archaeology (http://scholarworks.sfasu.edu/ita/) (Figure 1).

Building the Index

To begin, we explored the digital options that were available to us through our universities, then selected the bepress platform at Stephen F. Austin University as our best option. Using the suite of tools available to us through bepress means that the Index of Texas Archaeology (ITA) is archived in Portico, and that our content is indexed by Google, Google Scholar, CrossRef, and Altmetric. Digital object identifiers (DOIs) are being assigned to each report using CrossRef, whereby both the report and the references that each report cites—those that have a DOI—are indexed.

In addition to CrossRef, we are also working with bepress to integrate CrossMark, which will allow readers to ensure that they are citing the most up-to-date content. Any changes in the published version will be noted in the metadata, which can be accessed by clicking on the CrossMark logo. We are also working through the process of implementing the CrossRef API to include cited-by linking, where readers will be able to view those publications that cite each of the ITA reports. This manner of increased accessibility and distribution also helps to ensure that report authors, and those authors whose work is cited in the reports, receive full credit—and accessible metrics—for their efforts, similar to their colleagues in academia. Report authors are already seeing a spike in the number of their citations on Google Scholar, and ITA content is being cited widely in industry, CRM, and academic publications. Further, the bepress platform allows for the incorporation of supplemental data and media files that make it possible to include data and interactive 3D models; YouTube, Vimeo, and other video files; audio files (oral histories/interviews); and many other dynamic elements, bringing these important reports to life in very new and exciting ways (see an example of how supplemental data is included at http://scholarworks.sfasu.edu/ita/vol2014/iss1/2/).

Figure 1. Home page for the Index of Texas Archaeology.

While our goal is to distribute these primary sources to the widest possible audience while attributing credit to report authors, the platform is also a valuable tool for regulatory agencies, allowing them to respond quickly to open records requests by providing a link to the redacted report. Additionally, since the full text of each document is searchable and indexed, the reports can be easily found through searches on Google, Google Scholar, and other search engines. While the bepress platform is user-friendly, the reports now show up in general searches, where content can be downloaded without ever visiting the ITA site. However, supplemental data and interactive content is only accessible from the landing page for each report.

Why and How?

The Index of Texas Archaeology is needed because the public, who funds the bulk of this work, has historically been afforded minimal access to the wealth of information included in the reports, and even the academic community remains unaware of many key findings. In point of fact, some archaeologists have made their careers by summarizing the CRM literature to the academic community. Even to CRM professionals, access to reports remains largely restricted to a few select libraries or individuals with extensive holdings, and none are indexed, easily found in a digital format, or publically searchable.

The project began by defining the aim and scope of the ITA, then establishing and implementing policies to organize the format and structure. We then met with and discussed the platform with a number of archaeologists from state and federal agencies, since we wanted them to support this venture. The objective was to provide open access to the redacted CRM literature at no cost to the agencies, CRM practitioners, or end users. There would be no submission or use fees or advertisements. Site locations and images of human remains are redacted in all ITA content to protect sensitive information. We wanted the ITA to be built in such a way that the literature could be easily located (Google and Google Scholar) and indexed (CrossRef) by academic citation databases and social media (Altmetric), where—provided the DOI is included in the text of the post—mentions on social media will be tracked and recorded, and all would be viewable in the same place.

Populating the Site

The upload process (ingest) is very efficient, as we worked iteratively through numerous workflows to define the best method of populating metadata, uploading the reports, and indexing citations. Currently, this effort consists of two teams—one at the Center for Regional Heritage Research at Stephen F. Austin State University, and the other in the Center for Archaeological Studies, Department of Anthropology, at Texas State Univer-

sity—both of which are currently focused on addressing the backlog of reports. However, these two teams will soon splinter as one continues with the uploads while the other begins indexing the reports and citations, then assigning digital object identifiers (DOIs) to each report.

In the age of digital and social media, sharing is a cornerstone of any undertaking, and the bepress platform allows users to share the reports across 270-plus social media platforms, including those most widely used (Facebook, LinkedIn, Twitter, etc.), which is also inclusive of useful academic social media platforms like ResearchGate, Mendeley, CiteULike, and many others.

Alerts are another useful way to stay informed, and the bepress platform allows users to sign up for an RSS feed that alerts them to each new upload, or users can tailor a specific alert using bealerts (part of the bepress platform). By using the bealerts feature, readers can tailor their alerts to their particular interests. For example, if readers are interested in a particular topic (Clovis, for example), they would receive an e-mail every time content is uploaded with the word *Clovis* in the title or listed as a keyword. This feature is also useful for the various state and federal agencies, CRM firms, and universities, allowing them to stay apprised of uploads produced under their purview, since the agency names (e.g., TxDOT, Prewitt and Associates, CAR, etc.) are included in the metadata.

We wanted to have the support of various state and federal agencies, so we devised a method of report submission whereby the agencies must approve each report before it is posted on the ITA site. This allows a representative from each agency (Content Editor) to preview the entry as it will appear on the site, providing one final check of the document to ensure that any items that warrant redaction prior to publication are removed. Finally, all authors retain—at minimum—a Creative Commons Attribution license to their work, meaning that it must be cited if used. Some agencies have since crafted more specific copyright statements, and we updated our workflow to ensure that all license/copyright information is available on the landing page for each article and the second page of each cover page.

It is our hope that the ITA will serve to bring these important reports to a broader audience, providing unprecedented access to descendant communities, graduate students and scholars, schoolteachers, and avocationals, as well as interested members of the general public, whose tax dollars ultimately fund many of these undertakings. Importantly, we envision this endeavor as a pilot project for a much larger, more comprehensive effort that would expand to encompass redacted archaeological reports at the regional and/or national levels. This is a tall order to be sure, and there remains much to work through; however, the promise
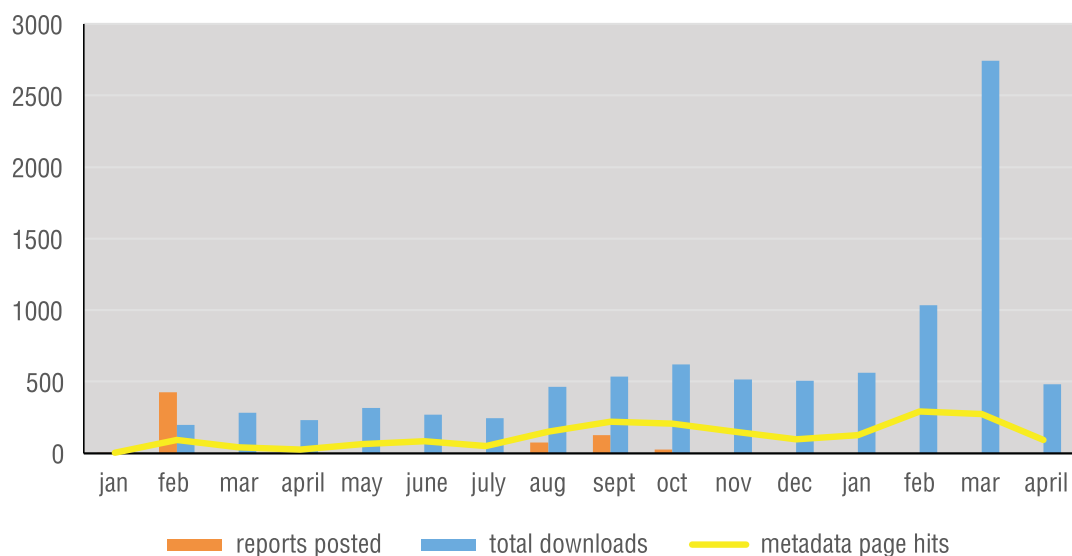
Figure 2. Monthly reports posted, downloads, and metadata page hits since inception.

is substantial, and the capacity of this resource to aid in raising public awareness associated with local, regional, and national archaeological endeavors could be enormous.

Current Response

The response to the Index of Texas Archaeology from the professional and public sectors has been overwhelmingly positive with 8,985 downloaded reports as of April 16, 2017. The number of downloads continues to increase daily, and the content is being downloaded around the globe (Figure 1). We want to remind readers that our CRM reports are only focused on Texas archaeology, or in a few cases, Mexico and Latin America. There also has been no formal public notification of the existence of this site. Firms are beginning to work with ITA to add their content, and we are working on a number of additional workflows that will accommodate uploads from academic partners as well. The ITA has been active for little more than a year, and in terms of metrics, metadata page hits and report downloads have continued to increase monthly (Figure 2). Digital reports on ITA have been downloaded in 89 countries around the globe (Table 1) with the greatest number in the United States. Broken down by state, most reports have been downloaded in Texas, as would be expected, but ITA reports have been downloaded from all 50 states and the District of Columbia (Table 1). Two hundred and three universities, school districts, and other educational institutions such as museums and libraries have downloaded 967 reports (Tables 2 and 3). Tables 2 and 3 also report the number

and locations of private companies, governmental agencies, and downloads by other organizations with 586, 247, and 33, respectively. However, the majority of reports, 7,097 downloads, have been made by private individuals. This overwhelmingly positive response, especially from individuals, highlights the need for access to this information, which has, until now, been largely hidden from view.

Table 1. Number of Downloads Globally.

Region	Downloads	Number States/ Countries
USA–Other States & DC	3,809	50
Texas	3,536	1
Europe	621	32
North & Central America	508	6
East Asia	170	12
South America	96	6
Africa	76	11
Australia & New Zealand	68	2
Central Asia	46	4
West Asia	43	9
Caribbean	10	4
Other Islands	2	2
Total	8,985	139

Table 2. Number of Downloads by Educational Institutions, Governmental Agencies, and Commercial and Other Entities.

Type of Entity	Number of Downloads				
	Foreign	USA	Texas	Grand Total	Percent
Commercial	223	285	78	586	31.0
Education	57	202	697	956	50.6
Government	13	79	155	247	13.1
Library	0	0	4	4	0.2
Military	0	55	0	55	2.9
Museum	1	0	6	7	0.4
Organization	11	5	16	32	1.7
Native American Tribes	-	1	0	1	0.1
Grand Total	305	627	956	1,888	

Table 3. Number of Educational Institutions, Governmental Agencies, and Commercial and Other Entities.

Type of Entity	Number of Entities			
	Foreign	USA	Texas	Grand Total
Commercial	79	108	49	236
Education	41	106	52	199
Government	4	36	22	62
Library	0	0	2	2
Military	0	4	0	4
Museum	1	0	1	2
Organization	8	4	7	19
Native American Tribes	-	1	0	1
Grand Total	133	259	133	525

Future Directions

To date, digital reports have been uploaded from the Center for Archaeological Research at the University of Texas at San Antonio, the Texas Department of Transportation, and the Center for Archaeological Studies at Texas State University. We are currently working on a memorandum of understanding with the THC and other private firms for the next—and largest—phase of this project. The addition of the THC reports will be a two-phase process: in the first phase, we would incorporate all of the 2,500–3,000 of the 2009–present (born-digital) reports, and in the second phase, we would scan, redact, and incorporate the many pre-2009 reports that are currently only available in print by working backward one year at a time, report by report. Ultimately, the objective is to make the entirety of the CRM literature for the state of Texas accessible, then add new reports as they become available. Also, this type of project is a positive reflection of the cooperation between numerous government agencies, universities, and private organizations that remain committed to protecting our cultural and historical resources. Eventually, these types of repositories should cover every state and provide public and professional communities access to the wealth of archaeological, anthropological, and historical information that has been, and continues to be, accumulated throughout the country.