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Central Ohio Archaeological Digitization Survey (COADS)

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Abstract

COADS is a large-scale, systematic effort to engage private collections in one small geographic area to enrich the official record of the pre-contact period archaeology in the region. This initial 2-year effort is funded by the National Science Foundation and has already documented over 14,000 artifacts and 300 sites. All materials are documented digitally (2D images) with a random 5% sample 3D scanned. We summarize methods, progress, public response, and a preliminary comparison to previously documented records. With over 10,000 artifacts and 80 sites in Ross County, we can conduct a coarse comparison to the previous OAI records and our newly recorded sites and materials.

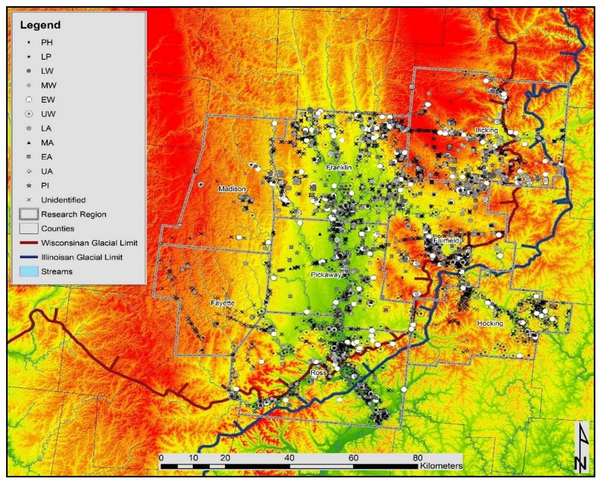

Figure 1: Map of Research Area with OAI sites

Introduction

Subsistence strategies and their impacts on residential mobility and tool use lives are written at the landscape scale; patterns are not composed merely of "habitation" sites (Nolan 2014). While settlements shifted, changes in the location of resource harvesting sites, and difference in overall mobility impacted resource use. Large-scale activity distribution patterns are "driven more by resource collection/extraction than by" (Nolan 2014:32) habitations.

Diagnostic points at once register age, activity, resource management, and land use. They are also abundant in Ohio's archaeological record. The distribution of points by type obviously reflects changing prehistoric patterns of land use. But, using geometric morphometric methods, tools themselves can be analyzed for variation by toolstone and resharpening allometry, and to document "morphing" from one to another type.

COADS is based on collaboration with private artifact collectors, focusing on assemblage distributions and temporally diagnostic projectile points. The study region (Figure 1) consists of Fairfield, Fayette, Franklin, Hocking, Licking, Madison, Pickaway, and Ross Counties. As much as 90% of informative artifacts, such as projectile points, are held in private archaeological collections (Shott 2008, 2015).

Historically, we have wrung our hands about collectors and blithely ignored the tremendous aggregate data that reside in their collections. We must stop pretending that our comparatively small databases, the product of diligent effort to high standards, somehow are sufficient when private collectors possess the vast majority of the diagnostic artifacts that provide the fuller context that progress in research requires.

Figure 2: Eric Olson collecting data in the "field"

Methods

Each collection is 2D and 3D documented in the field, which is usually the collector's home. Attributes that cannot be identified in 2D images are measured in the field, which include maximum blade thickness (± 0.01 mm), weight (± 0.1 g), and raw material (Figure 2-3). Lithic sourcing is conducted with a comparative collection and 25x magnification (a jeweler's lens).

Rather than capture photographs, which require the setup of a camera tripod and lighting, COADS uses a flatbed scanner with graph paper to capture two dimensional images of bifaces ("front" and "back"). Flatbed scanning is more efficient and portable in the field than a photo-station. All scans are captured at 600 DPI or higher (Figure 4).

Collectors are interviewed and asked about their collection, the acquisition history of their artifacts, and the location of sites from which the artifacts came. Location precision of collections is organized into five classes from most to least precise: 1) site identified by survey supported with maps, photographs, and/or notes; 2) same precision as 1, with only a reliable informant supporting accuracy; 3) identification of artifacts to property, parcel, or field; 4) collections with known locations, but no link between specific artifacts and locations; 5) county or township level provenience. These classes also reflect the priority of data capture in the field of collections; collections without county-level provenience are excluded from COADS, while the primary goal is to capture as much of class 1 provenience as possible. Within Ross County, the collections provenience of artifacts ranges from level 1 to 3.

Figure 3: Andrew Weiland collecting data in the "field"

Figure 4: Flatbed scan of artifacts from COADS Survey (FCHS_299-314)

Ross County

Ross County is home to 1015 sites in the OAI (see Nolan 2014) including the iconic Hopewell Earthworks (Figure 5). COADS documented over 10,000 artifacts from the county, including Gary Argabright's collection with 82 locations. Here we compare the distributions of these two samples of sites with respect to choice of setting.

The OAI and collector sites show the same patterns of slope usage (X2=5.8, df=4), the latter with a slightly more pronounced preference for A and B slopes (Table 1). There are slight preferences for occasional flooding and well drained soils among the privately recorded sites, but no significant difference in location with respect to drainage (X2=8.4, df=5), flooding (X2=4.5, df=2), or ponding (X2=0.2, df=2; note low count cells). There is a marked preference for silt loam in the private collection (X2=456.3, df=3; collapsed small cells) though with low association (V = 0.65).

Collector and the OAI site distributions overlap substantially in coverage. We do see some several areas that this collector examined that have not received professional attention and several areas that are dominated by unidentified prehistoric sites have been documented in detail by the private collection (Nolan et al. 2018).

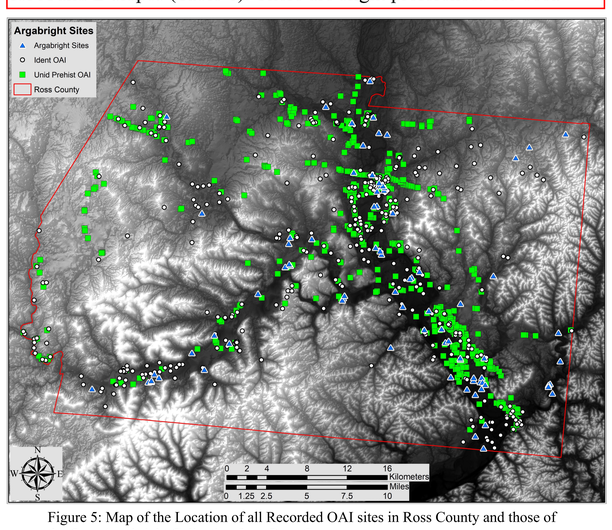

Figure 5: Map of the Location of all Recorded OAI sites in Ross County and those of the Gary Argabright Collection from Ross County

Table 1: Ross County Data

	Argabright	%	OAI	%
Slope				
A (0-2%)	51	62.20	555	54.68
B (3-6%)	24	29.27	254	25.02
C (7-12%)	2	2.44	99	9.75
D (13-18%)	5	6.10	45	4.43
E (19-25%)	0	0.00	30	2.96
F (26-35%)	0	0.00	3	0.30
Drainage				
Excessive	2	2.44	21	2.07
Well	74	90.24	801	78.92
Mod Well	2	2.44	96	9.46
Some Poor	1	1.22	57	5.62
Poor	0	0.00	1	0.10
Very Poor	2	2.44	19	1.87
Flooding				
Frq	4	4.88	45	4.43
Occ/Rare	21	25.61	165	16.26
Non	57	69.51	787	77.54
Ponding				
Frq	0	0.00	1	0.10
Occ	1	1.22	17	1.67
Non	81	98.78	979	96.45
Texture				
Clay loam/Muck	0	0.00	10	0.99
Silty clay loam	2	2.44	604	59.51
Silt loam	50	60.98	20	1.97
Loam	25	30.49	278	27.39
Sandy loam	1	1.22	12	1.18
Gravelly loam	4	4.88	78	7.68
Channery silt loam			2	0.20

Summary

Projects like COADS are necessary to record the full prehistory of any region. As has been shown previously, private collections match and supplement records of professionals. Further, many non-diagnostic lithic scatters may take on new significance when the results of decades of collection are incorporated. With efforts like COADS we can make CRM archaeology more efficient and effective (see Nolan et al. 2018), and tell more complete stories about the past.

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