

From Archives to Analysis: Evaluation of Legacy Flotation Assemblages from the Middle Rio Grande, New Mexico

Research Report to Arizona Archaeological and Historical Society

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The AAHS Research Grant partially supported Phase 1 of my dissertation by helping defray costs associated with archival and collections work in summer 2023 at the Center for New Mexico Archaeology (CNMA) in Santa Fe, specifically the Museum of Indian Arts & Culture (MIAC) and the Office of Archaeological Studies (OAS) Ethnobotany Laboratory and Library. My dissertation examines how land-use practices reflect changing colonial power relations in Spanish Colonial New Mexico (1598–1821 CE), using archaeobotanical evidence (seeds and wood charcoal) from legacy collections curated in New Mexico repositories.

AAHS funds enabled two main tasks in Phase 1:(1) an inventory and suitability assessment of curated flotation samples from the Middle Rio Grande region for macrobotanical analysis, and (2) a review of methodological approaches in existing CRM-based flotation studies (collection, processing, analysis, quantification, and reporting).

Because available reports and documentation rarely distinguish among collected, floated, and analyzed sample counts, I undertook a sample-by-sample review (Figure 1) to verify and record the actual status of each curated item and to cross-check these observations against the (non-digitized) flotation logs housed at the OAS Ethnobotany Laboratory. This work shows that CRM reports typically list only the number of analyzed samples and seldom indicate the total collected and/or floated. As a result, substantial unanalyzed assemblages remain invisible in the published and gray literature. Of approximately 700 curated flotation samples I reviewed at MIAC, only 305 had been analyzed and therefore reported. For example, the Valencia Pueblo (LA 953) and Alameda Blvd. Project assemblages (LA 421, LA 50240, LA 87058) each include about a hundred or more unanalyzed flotation samples (Table 1). This preliminary survey confirmed the availability of suitable, previously unanalyzed assemblages for my dissertation macrobotanical analysis.



Figure 1. Inventory and verification process of curated flotation samples from Middle Rio Grande Sites.

To integrate multiple CRM-based datasets with my own analyses into a regional/temporal synthesis, it was essential to understand collection, processing, identification, quantification, and reporting protocols. Many archaeobotanical contributions appear as brief summaries, chapters, or appendices within excavation reports and often provide sparse or incomplete descriptions of methods. Data are commonly presented only as presence/absence or ubiquity values, without raw counts/weights needed for replication and broader synthesis. I also found widespread reliance on reductive analytical strategies (e.g., scanning or partial sorts rather than full sorting), which tend to produce incomplete datasets and constrain interpretation. Consequently, these studies are well suited for reanalysis, with strong potential to refine or (where appropriate) challenge established claims. Where available, flotation analysis logs allowed me to reconstruct methodological protocols (e.g., collection method, flotation mesh size, scanning vs. full sort) and to judge suitability for reanalysis.

Table 1. Index of sites with flotation samples reviewed during Phase 1 in 2023 at the MIAC.

LA No.	Site Name	Occupation Type	PSC (n)	VSC (n)	References
LA 421	Alameda Pueblo	Prehistoric	29	109*	McBride and Brown (1997)
LA 50240	Old Alameda	Prehistoric and Historic	44	140*	
LA 87058	Alameda	Historic	32	117*	
LA 421	Alameda School Site (Alameda Pueblo)	Prehistoric and Historic	18	n/a	McBride (2013)
LA 53662	Belen Bridge	Prehistoric	58	n/a	Toll (1995)
LA 4955	Casa Quemada	Historic	40	n/a	Wiseman (2017)
LA 54147	Coronado's Campsite	Historic	28	28	Toll (1989)
LA 282	Las Huertas (in Socorro)	Historic	22	n/a	Toll (1987)
LA 46635	San Antonio de los Poblanos	Historic	0	1	Rudecoff (1987)
LA 953	Valencia Pueblo	Prehistoric and Historic	22	301*	McBride (1997)
LA 67321	Valencia	Historic	12	0	McBride (2001)
		Totals:	305	696	

PSC - published sample count; VSC - verified sample count (including all samples located at the MIAC curation facility, Santa Fe, NM); * - the total number of collected samples that are not mentioned in reports. The author determined the total by reviewing and recording each curated sample individually at the MIAC in 2023); n/a - not available.

This Phase 1 inventory directly supported a successful NSF DDRIG proposal that now funds the subsequent analytical phase of my dissertation.

An additional outcome is a manuscript currently under review at *Kiva*, “*Beyond presence/absence: Reanalyzing archaeobotanical legacy collections from the American Southwest*” (with W. Campbell and J. M. Marston). Drawing on the archival work and a full reanalysis of flotation assemblages, we show that reexamining previously scanned or unexamined samples increases taxonomic richness and reveals previously overlooked taxa, including cultigens such as squash, as well as economically important wild plants. The study also highlights the underuse of wood-charcoal analysis (anthracology) in flotation studies and proposes pragmatic improvements: routine access to reflected-light metallurgical microscopes, stronger analyst training, expanded reference collections and the publication of a regional comparative wood-anatomy atlas that includes shrubby taxa, higher target counts of identified fragments, and standardized, quantitative reporting with open supplemental data. More broadly, the work offers a model workflow for discovering and triaging legacy assemblages when digital metadata are incomplete and encourages a shift from preliminary scanning to full-sort protocols where appropriate.

Preliminary archival work at MIAC and OAS was indispensable for locating and documenting legacy assemblages that would otherwise remain obscured in gray literature. The AAHS Research Grant advanced both the substance and the pace of my dissertation and helped identify systematic gaps in reporting archaeobotanical flotation assemblages, gaps that the *Kiva* manuscript addresses by arguing for field-wide improvements in transparency, standardization, and data sharing.

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