What If Site Information Potential Was Not Binary?
A Research Question Driven, Analytically Based Approach to the NRHP Eligibility Assessment

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ABSTRACT

Being faced with assessing site significance in terms of information potential (NRHP criterion D) is a daunting task when documenting sites as part of a research project. While it would seem obvious that sites recorded while doing research meet the "have yielded or may be likely to yield, information" standard, this simple "all therefore eligible" solution does not effectively or realistically deal with difference in research potential. A methodological experiment where, rather than viewing research potential as a binary attribute, but as a multi-dimensional research question driven matrix is described using a prehistoric site sample from the NW Wyoming's GRSLE project.

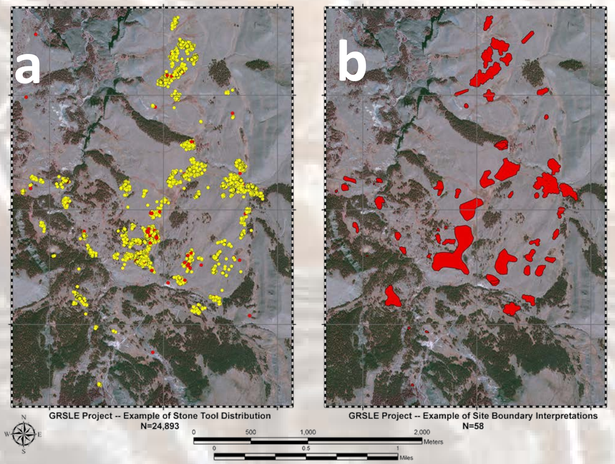


FIGURE 1. Distribution of chipped stone in portion of GRSLE survey area (a) and site boundaries used to describe the same area (b).

TRANSFORMING LANDSCAPES TO SITES REQUIRES PROCESSING

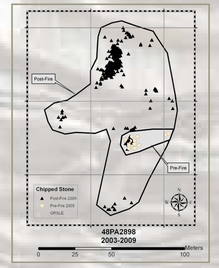


FIGURE 2. Changes in artifact distributions and site boundaries at two recording events.

ISSUE 1: Landscapes, Sites, and Context

At face value, it would seem that deciding whether an archaeological site contains important information would be a straightforward exercise, and evaluating eligibility for the NRHP under criterion D should be fairly cut and dried. Not only is the criterion not too complex, but there are a number of comprehensive discussions of the evaluation process (Hardesty and Little 2000; King 2000, 2004, 2007; NRHP Staff 1990). However, what seems uncomplicated from an initial encounter, develops cascades of complexity as it transforms from research program through multiple tiers of management requirements (Todd 2010a, b).

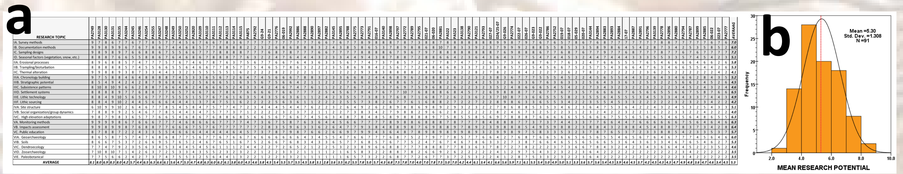
An initial conceptual problem can arise even before issues of eligibility and importance enter the picture. At a landscape scale, which is the scale of many research programs, key attributes for assessing information importance – site boundaries – are both arbitrary and dynamic (Figures 1 and 2). Items and item clusters take on research relevance, in part, as a function of their contextual relationships to other items and clusters that may or may not correspond to site boundary definition protocols. Sites are landscape scale patterns that have been passed through the interpretive grinder.

ISSUE 2: If not D, then LIS?

For the moment, let's put the issue of site boundaries on the back burner and focus on how the potential information content of a site is assessed relative to NRHP criterion D. Given the obvious tautological assertion that since the sites used for examples here (Figure1) were selected for documentation because they meet the needs of the series of research domains, then the logical answer to the eligibility question of whether they have the potential to contribute information is straightforward and wholehearted: "Yes." Further, the attribution of research potential in general is derived from the creative process of developing research questions and any well-educated, energetic, intelligent archaeologist should be capable of developing significant research questions for almost every archaeological site they encounter.

Personally, every time I consider checking the 'not eligible" box on a site form I feel more than a bit intellectually dishonest and often mumble or growl to myself (or whoever else happens to be near): "Of course I could think of several productive and useful research projects that could be done with this site, but must just be lazy today." Or if feeling a bit more irritable, will wonder if my archaeological training has not been sufficient to consider a full range of potential research questions; perhaps a "not eligible' due to lack of research potential is more a matter of ignorance rather than just being lazy? Has my archaeological training not be sufficient in method, theory, or breadth? But since I am often prone to consider multiple explanations, finally get to a third alternative; maybe am just too slow-witted to use my education and training to be able to fully assess the range of research options that any site might offer. Maybe instead of being lazy or ignorant, could I just be being stupid?

This suggests a fairly simple set of criteria to that could explain why an archaeological site would be considered not to have research potential, which can be summarized as the "*if not D, then LIS*" guidelines. Every time I consider an archaeological site being recorded by the GRSLE project as not being eligible under NRHP criterion D, I find it useful to run down a simple checklist: am I feeling *lazy, ignorant, or stupid* (LIS)? As normally practiced, evaluation of a site's research potential seems a more realistic assessment of the archaeologist's mood when making the evaluation rather than a realistic evaluation of a site's archaeological potential.



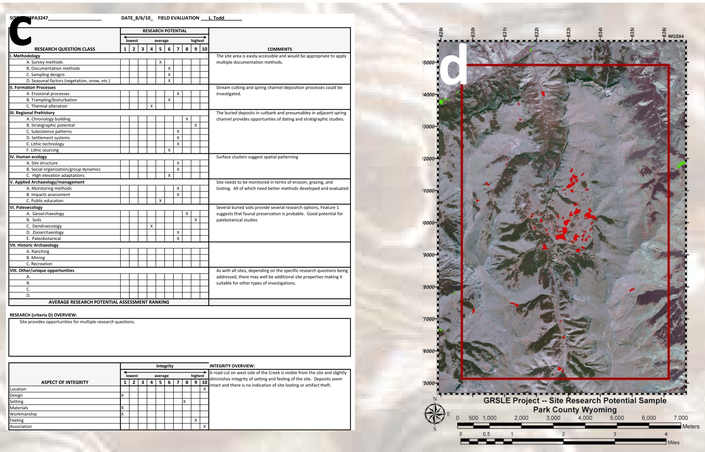
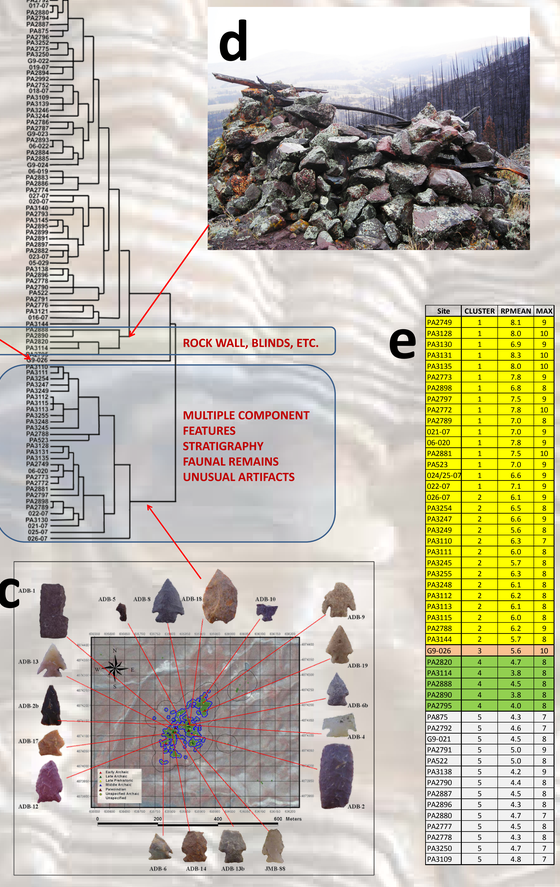


FIGURE 3. Sample of 91 GRSLE sites with multiple research domain evaluation; (a) summary of evaluation scales; (b) range of mean research potential values; (c) sample of evaluation form; and d) approximately 6000 ha block in which all sites have been evaluated for 6 basic research topic sets.

ISSUE 3: Research Questions, Site Relevance, Context, and Iterative Evaluation

Based on the premises outlined as Issue 2, that it is difficult not to be able to find a research potential for any archaeological site, yet being aware that an all-or-nothing approach provides little or no useful information for resource managers, the evaluative experiment used in this project begins with the assertion that every site has research potential, but the nature of that potential is not equal for every site. There are a number of research domains for which a site's research could be evaluated and these domains should be derived from the research questions driving a project. For the initial methodological experiment reported here, six primary research dimensions are considered: I) archaeological methodology, II, archaeological site formation processes, III regional prehistory, IV, human ecology, V, applied archaeology/management, and VI paleoecology. In addition, options for additional evaluation of historic sites (VII) and other less common potential types of sites in the GRSLE area (e.g., rock art, perishable materials, trade goods, etc.) are also included in an evaluation summary form shown here (Figure 3c). Each of these research domains is divided into several secondary topics that might be applicable. Each of the secondary research topics is ranked from 1 (very low research potential) to 10 (extremely high research potential). This evaluation begins with the assumption that each site has multiple levels of research potential, albeit perhaps sometimes of minimal return (ranking of 1) when compared to others in the region. A value of five on this scale is envisioned as indicating that the site has an "average" research potential (Figure 3b). While these scaled values are averaged for each of the six primary categories and for the site as a whole, the goal is most assuredly not to reduce the complexity of evaluation of site research potential to a single numerical value. A site with and average research potential ranking of 5.7 would not be an inherently "better" site than one with an average value of 4.2 – at present, it's simply a methodological experiment in examining how to array sites based on research potential in a less capricious, more replicable manner (Figure 4) .

As another experiment, the site evaluation matrix data (Figure 3a) from a sample of the GRSLE surveyed landscape (Figure 3d) were imported into SPSS and used for a hierarchical cluster analysis. The dendrogram using average linkage between groups is shown in Figure 5a.



Site	CLUSTER	RPMEAN	MAX
PA2749	1	8.1	9
PA3128	1	8.0	10
PA3130	1	6.9	9
PA3131	1	8.3	10
PA3135	1	8.0	10
PA2773	1	7.8	9
PA2898	1	6.8	8
PA2797	1	7.5	9
PA2772	1	7.8	10
PA2789	1	7.0	8
021-07	1	7.0	9
06-020	1	7.8	9
PA2881	1	7.5	10
PA523	1	7.0	9
024/25-07	1	6.6	9
022-07	1	7.1	9
026-07	2	6.1	9
PA3254	2	6.5	8
PA3247	2	6.6	9
PA3249	2	5.6	8
PA3110	2	6.3	7
PA3111	2	6.0	8
PA3245	2	5.7	8
PA3255	2	6.3	8
PA3248	2	6.1	8
PA3112	2	6.2	8
PA3113	2	6.1	8
PA3115	2	6.0	8
PA2788	2	6.2	9
PA3144	2	5.7	8
G9-026	3	5.6	10
PA2820	4	4.7	8
PA3114	4	3.8	8
PA2888	4	4.5	8
PA2890	4	3.8	8
PA2795	4	4.0	8
PA875	5	4.3	7
PA2792	5	4.6	7
G9-021	5	4.5	8
PA2791	5	5.0	9
PA522	5	5.0	8
PA3138	5	4.2	9
PA2790	5	4.4	8
PA2887	5	4.5	8
PA2896	5	4.3	8
PA2880	5	4.7	7
PA2777	5	4.5	8
PA2778	5	4.3	8
PA3250	5	4.7	7
PA3109	5	4.8	7

FIGURE 5. Classification of GRSLE site research potential matrix using (a) hierarchical cluster analysis and (e) K-Means clustering (first 5 of 7 cluster solution shown). Sites with the most diverse range of high research topic evaluations form a distinct grouping (e.g., [c]), as do sites with stone structures, but few or no stone tools (d). The clusters also highlights unique sites (b).

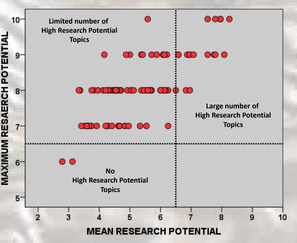


FIGURE 4. GRSLE site sample arrayed by mean and maximum research potential values.

CONCLUSIONS

Site information potential analysis should be:

1) undertaken in terms of specific research topics
2) dimensional rather than binary
3) based on multiple basic & applied attributes
4) able to deal with dynamic site properties
5) sensitive to local and regional context
6) subject to frequent, comparative re-evaluation

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