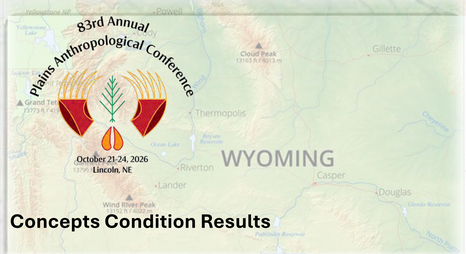
Survey, Sampling, and Surface Archaeological Assessment: Looking at the Record

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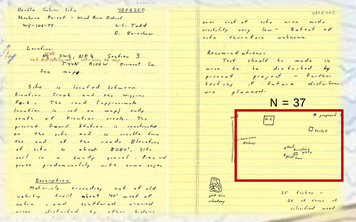
Archaeological surface survey and documentation methods vary widely and are often presented as key to recording archaeological spatial patterns, but too often they are assessed without methodological consideration. Examples of analytical evaluations of surface inventory methods are needed, especially when results relate to projects with a high potential for archaeological resource damage. Using data from a long-term, largely non-collection surface inventory project in NW Wyoming (GRSLE), this poster illustrates comparisons of methods for estimating artifact densities and inventory coverages.



Concepts Condition Results

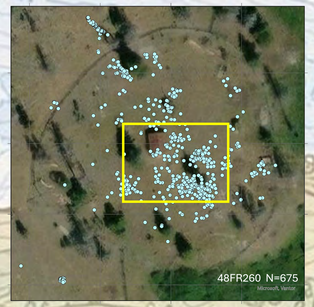
Most of us have documented archaeological sites and participated in surveys. Those with extensive field work will recognize that an archaeological site recorded once may look very different on subsequent recordings. For example, site 48PA260 was recorded in 1977 and again in 2013. In 1977, 37 artifacts were documented; during a second recording in 2013, we documented 675 artifacts. While the technology differed markedly in 2013 compared with 1977, the primary difference was conceptual. The first visit approached the assemblage as a "site", while the second took on an artifact-based approach. Since 2002, the GRSLE project (Todd and Dalmas 2026) has worked to develop a regional, landscape-scale view of the archaeological record of NW Wyoming through artifact-based recording rather than site based.

1977



"Test should be made in area to be disturbed by present project – further testing if future disturbances are planned."

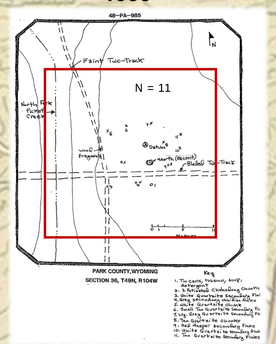
2013



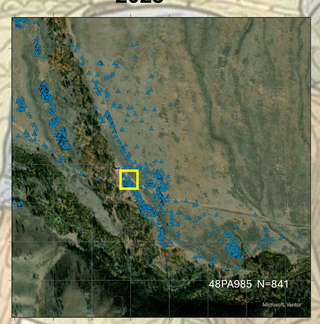
Looking Again

The initial documentation of 48FR260 was meant to quickly evaluate whether a planned activity, the installation of a new outhouse, might impact the artifact cluster. Revisiting the cluster years later to fully document the surface materials revealed a different picture. In other situations, such as site 48PA985 shown below, documentation was needed to evaluate NRHP eligibility requiring a broader range of potential data. The documentation of 48PA985, performed in 1999, only reported 11 chipped stone artifacts, and concluded that site was not eligible due to not having "depth or diagnostics," was not supported by reexamination in 2025, when over 600 surface artifacts and a subsurface bison mandible, AMS-dated to 3285±20 BP, associated with buried debitage, were recorded

1999



2025



Looking Deeper

As the number of surface artifacts and the size of cluster 48PA985 increased, it became clear that material was not only on the surface of the higher terrace, but also within fine-grained overbank sediments on a lower terrace. Debitage and bone were exposed and eroding out of the lower terrace's cutbank. The addition of dated and sub-surface materials provides support for NRHP eligibility than the original recording could provide.



Cutbank exposed materials, not just surface scatter

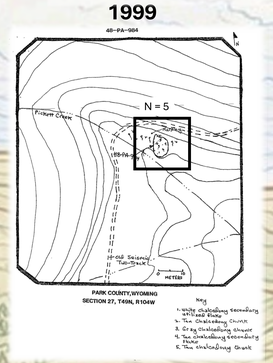


Artifact-based documentation

Clusters and Inventory Areas

If we expand the view from single clusters, as shown in the two different views of 48PA984, to the larger Class III inventory block in which the cluster was identified, the difference between artifact and site-based approaches are more evident. What was originally identified as a cluster of five lithics with "no depth or diagnostics" yielded over 1,100 pieces of chipped stone in 2025.

1999



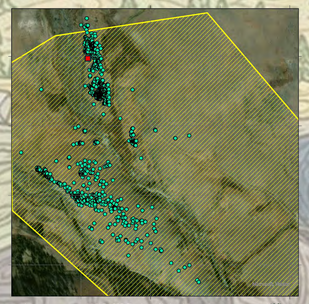
2025



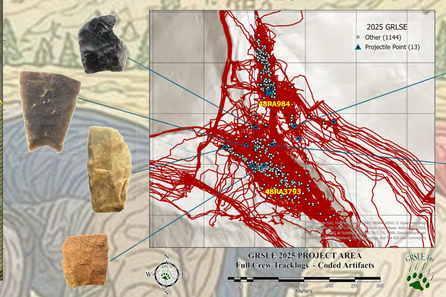
The area, which was reported in 1999 reported no projectile points, while the 2025 inventory identified 13, including 6 Paleoindian diagnostic points.

Continuous tracking of the 2025 GRSLE crew members via Garmin tracklogs, while conducting inventory and artifact mapping, provides the basis for the GRSLE assessment of the proportion of area inventoried.

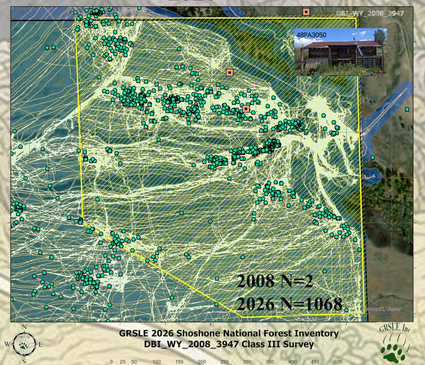
2025



2025



2026



Same Landscape, Different Conclusions

In 2026, GRSLE surveyed a portion of an area where, in 2008, a "*Class III survey was conducted on 560 acres by ********. One archaeological site [48PA3050] and four isolated finds were recorded. The new site consists of a historic cow camp, and is recommended as eligible to the National Register. Therefore, a determination of No Adverse Effect is recommended for this project.* The yellow-highlighted area to the left is a 37 ha (91.5 ac) portion of the 2008 560 ac inventoried area that contains 2 of the four reported isolated chipped stone pieces. The 2026 15m and 1m buffered crew tracklogs and the 1068 coded artifacts are shown within this 37 ha, previously inventoried area. The 2026 results (recorded 1068 artifacts, not 2) suggest a different conclusion than that stated in the 2008 report:

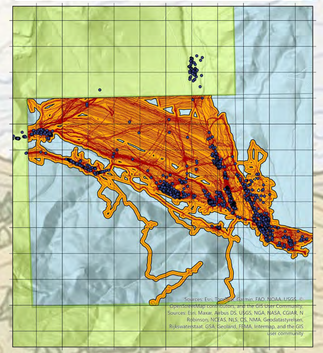
There is a high degree of confidence that the objectives of the inventory have been met. In addition to numerous rodent burrows, stream and trail cuts were examined for evidence of cultural materials. No indications of buried artifacts or features could be detected along the frequently rocky surface. In light of this and the lack of aeolian deposits, the potential for unlocated cultural materials is regarded as generally low. However, some potential exists along the Pickett Creek terrace where alluvial deposition exceeds 50 cm in depth. No additional archaeological or historical work is believed necessary.

Assessing Coverage and Content

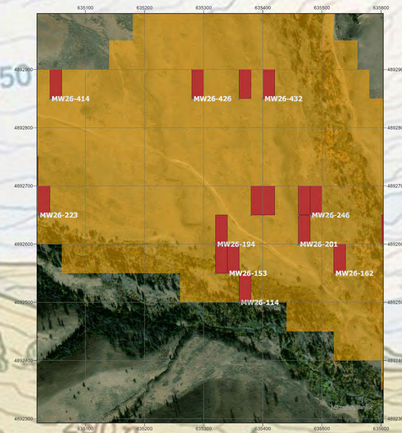
Team member tracklogs, as shown below, are used in 2 ways: 1) all logs are buffered by 15m to define the area inventory area, and 2) they are also buffered by 1m to estimate the area actually examined. In the table below, the 15m buffer area is 140 ha, and the 1m-buffered area is 57 ha, which represents 41% of the estimated inventory block survey area.

2025

Ownership	General Type	Inventory Area 15m Buffer (ha)	Area Inventoried 1m Buffer (ha)	% Inventoried	% Chipped Stone	% Ha Inventoried
Wyoming State Lands	Sage Brush Steppe/Riparian	139.66	56.9	40.74	3147	55.3



2026



Looking Back

Have compared previous work with recent work – now looking at a systematic evaluation of the recent work. In one 2025 inventory area, with tracklog coverage estimated at 41%, we randomly selected 25 20x50m Modified-Whittaker nested sampling units (Burger et al. 2004; Burger and Todd 2006; Stohlgren 2007. for intensive resurvey in 2026.

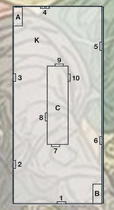
Thinking Ahead

Comparing the 2026 sample blocks into the 2025 5 m transect-spacing inventory produced a mean increase in artifact documentation of 53% (1013 artifacts coded in plot areas in 2025 and 1746 coded 2026). Bottom line: the sample provides a replicable, systematic way to assess results and a useful way to review them.

Density Class	Previously mapped artifacts
Class 1	0 artifacts
Class 2	1–10 artifacts
Class 3	11–25 artifacts
Class 4	26–50 artifacts
Class 5	More than 50 artifacts

Randomly select 5 20x50m grid blocks from each previously mapped artifact density class.

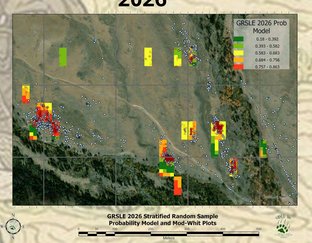
PLOT	DensClass	2026 Inv (m2)	%2025 Inventory	2025 Arts	2008 Arts	26-25 Diff	Sub-Plots				% Increase	% Diff
							70cm	A	B	C		
MW26-414	1	58.30	5.83	0	3	3	3	0	0	0		200.00
MW26-426	1	508.20	50.82	0	11	11	8	0	1	2		200.00
MW26-114	1	110.20	11.02	0	0	0	0	0	0	0	0.00	0.00
MW26-201	1	498.80	49.88	0	1	1	0	0	0	1		200.00
MW26-2	1	223.70	22.37	0	14	14	14	0	0	0	100.00	200.00
MW26-315	2	492.60	49.26	1	18	17	13	1	1	3	0	94.44	178.95
MW26-430	2	578.20	57.82	4	12	8	7	1	1	1	2	200.00	100.00
MW26-241	2	608.20	60.82	2	12	10	4	0	0	5	3	500.00	142.86
MW26-208	2	454.30	45.43	2	8	6	5	0	0	0	3	75.00	120.00
MW26-16	2	228.16	22.82	1	3	2	3	0	0	0	0	66.67	100.00
MW26-220	3	429.60	42.96	20	44	24	36	2	0	1	5	54.55	75.00
MW26-624	3	927.10	92.71	19	29	10	15	0	0	12	2	34.48	41.67
MW26-242	3	856.50	85.65	12	62	50	32	1	1	22	6	80.65	135.14
MW26-101	3	887.10	88.71	16	39	23	16	0	2	14	7	143.75	83.64
MW26-81	3	921.40	92.14	22	93	71	47	1	1	29	15	322.73	123.48
MW26-268	4	930.40	93.04	45	125	80	79	2	2	39	7	64.00	94.12
MW26-269	4	918.35	91.84	32	80	48	55	3	3	15	4	60.00	85.71
MW26-152	4	535.20	53.52	35	26	-9	17	0	0	0	9	-34.62	-29.51
MW26-432	4	965.30	96.53	45	101	56	63	2	0	34	2	124.44	76.71
MW26-245	4	886.00	88.60	36	50	14	29	1	0	10	10	38.89	32.56
MW26-223	5	986.90	98.69	70	130	60	71	10	2	40	7	46.15	60.00
MW26-194	5	950.90	95.09	54	49	-5	25	1	19	4	0	-9.26	-9.71
MW26-153	5	786.10	78.61	361	437	76	393	31	0	4	9	17.39	19.05
MW26-246	5	999.40	99.94	158	294	136	215	4	0	55	21	46.26	60.18
MW26-162	5	963.50	96.35	78	105	27	56	0	0	30	19	34.62	29.51
Summary		16704.41	66.82	1013	1746	733	1206	60	32	319	134	41.98	53.14



2026



2026



Conclusions

***Are we documenting differences in the archaeological record—or differences in how we examine it? Before interpreting spatial patterns in the archaeological record, we need to understand how our methods produced them.* the record is mostly a reflection of archaeologists' behavior, not necessarily ancient human behavior.**

Burger, O., and L.C. Todd.
2006. Grain, Extent, and Intensity: The Components of Scale in Archaeological Survey. In *Confronting Scale in Archaeology: Issues of Theory and Practice*, edited by G Lock, and B.L. Molyneaux, pp. 235–255. Springer.
Burger, O., Lawrence C. Todd, T. Stohlgren, P.C. Burnett, and D Stephens.
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2026. Time, Context, and Marginal Archaeology: Landscape Taphonomy in the Greater Yellowstone Ecosystem, *Quaternary Science Reviews* 388.110082. https://doi.org/https://doi.org/10.1016/j.quascirev.2026.110082.