

Bibliography & Suggested Reading

Ammerman, Albert J.

- 1981 Surveys and Archaeological Research. **Annual Review of Anthropology** 10:63–88.

Anderson, James M., and Edward M. Mikhail

- 1998 **Surveying: Theory and Practice.** 7th ed. McGraw-Hill Science/Engineering/Math, Columbus, OH.

Banning, Edward B.

- 2002 **Archaeological Survey.** Manuals in Archaeological Method, Theory and Technique. Kluwer Academic/Plenum Publishers, New York.

Banning, Edward B., A. L. Hawkins, and S. T. Stewart

- 2006 Detection Functions for Archaeological Survey. **American Antiquity** 71(4):723–742.

Billman, Brian R., and Gary M. Feinman (editors)

- 1999 **Settlement Patterns in the Americas: Fifty Years Since Virú.** Smithsonian Institution Press, Herndon, VA.

Black, Kevin D.

- 1994 **Archaeology of the Dinosaur Ridge Area.** Friends of Dinosaur Ridge, Colorado Historical Society, Colorado Archaeological Society and Morrison Natural History Museum. Morrison, CO.

Burger, Oskar, Lawrence C. Todd, Paul Burnett, Tomas J. Stohlgren, and Doug Stephens

- 2002–2004 Multi-Scale and Nested-Intensity Sampling Techniques for Archaeological Survey. **Journal of Field Archaeology** 29(3 & 4):409–423.

Burke, Heather, Claire Smith, and Larry J. Zimmerman

- 2009 **The Archaeologist's Field Handbook: North American Edition.** AltaMira Press, Lanham, Maryland.

Collins, James M., and Brian Leigh Molyneaux

- 2003 **Archaeological Survey.** Archaeologist's Toolkit Volume 2. Altamira Press, Lanham, MD.

Fagan, Brian M.

2009 **In the Beginning: An Introduction to Archaeology.** 12th ed. Prentice Hall, Upper Saddle River, NJ.

Fish, Susanne K., and Steven A. Kowalewski (editors)

1989 **The Archaeology of Regions: A Case for Full-Coverage Survey.** Smithsonian Institution Press, Washington, D.C.

Gallant, T. W.

1986 “Background Noise” and Site Definition: a Contribution to Survey Methodology. **Journal of Field Archaeology** 13(4):403–418.

Greene, Kevin, and Tom Moore

2010 **Archaeology: An Introduction.** 5th ed. Routledge, New York.

Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder

2008 **Field Methods in Archaeology.** 7th ed. Left Coast Press, Walnut Creek, CA. Originally published 1997, Mayfield Publishing Co., Mountain View, CA.

Howard, Philip

2007 **Archaeological Surveying and Mapping: Recording and Depicting the Landscape.** Routledge, Florence, KY.

King, Thomas F.

1978 **An Archaeological Survey: Methods & Uses.** Heritage Conservation and Recreation Service, U.S. Dept. of the Interior, Washington, D.C.

Kintigh, Keith

1988 The Effectiveness of Subsurface Sampling: A Simulation Approach. **American Antiquity** 53(4):686–707.

Kipfer, Barbara Ann

2007 **The Archaeologist’s Fieldwork Companion.** Blackwell Publishing, Malden, MA.

Landem, Michael J.

2011 Principles of Archaeological Survey for the Western United States. **Southwestern Lore** 77(1):1–25.

Linklater, Andro

- 2003 **Measuring America: How the United States was Shaped by the Greatest Land Sale in History.** Plume, Penguin Group, New York.

Maschner, Herbert D. G., and Christopher Chippindale (editors)

- 2005 **Handbook of Archaeological Methods.** AltaMira Press, Lanham, MD.

McManamon, Francis P.

- 1984 Discovering Sites Unseen. *In: Advances in Archaeological Method and Theory*, edited by Michael B. Schiffer, vol. 7, pp. 223–292. Academic Press, New York.

Mutel, Cornelia Fleischer, and John C. Emerick

- 1992 **From Grassland to Glacier: the Natural History of Colorado and the Surrounding Region.** Revised ed. Johnson Books, Boulder, CO.

Nance, Jack D.

- 1983 Regional Sampling in Archaeological Survey: The Statistical Perspective. *In: Advances in Archaeological Method and Theory*, edited by Michael B. Schiffer, vol. 6, pp. 289–356. Academic Press, New York.

National Park Service

- 1997 **How to Apply the National Register Criteria for Evaluation.** National Register Bulletin No. 15, U.S. Dept. of the Interior, U.S. Government Printing Office, Washington, D.C. Also on-line at <http://www.nps.gov/history/nr/publications/bulletins/pdfs/nrb15.pdf>.

Neumann, Thomas W., and Robert M. Sanford

- 2001 **Cultural Resources Archaeology.** AltaMira Press, Walnut Creek, CA.

Odell, George H., and Frank Cowan

- 1987 Estimating Tillage Effects on Artifact Distributions. *American Antiquity* 52(3):456–484.

Office of Archaeology and Historic Preservation (OAHP)

- 2007 **Colorado Cultural Resource Survey Manual. Guidelines for Identification: History and Archaeology. Volume I: The Steps.** Revised ed. OAHP Publication #1527, Colorado Historical Society, Denver.

- Orton, Clive
 2000 **Sampling in Archaeology.** Cambridge Manuals in Archaeology. Cambridge University Press, New York.
- Peregrine, Peter N.
 2015 **Archaeological Research: A Brief Introduction.** 2nd ed. Left Coast Press, Walnut Creek, California.
- Renfrew, Colin, and Paul Bahn
 2008 **Archaeology: Theories, Methods and Practice.** 5th ed. Thames and Hudson, New York.
- Schiffer, Michael B.
 2002 **Formation Processes of the Archaeological Record.** University of Utah Press, Salt Lake City.
- Scollar, I., A. Tabbagh, A. Hesse, and I. Herzog
 1990 **Archaeological Prospecting and Remote Sensing.** Cambridge University Press, Cambridge, England.
- Shott, Michael J.
 1985 Shovel-Test Sampling as a Site Discovering Technique: A Case Study from Michigan. **Journal of Field Archaeology** 12(4):457–468.
- Spier, Robert F. G., George Spindler, and Louise Spindler
 1983 **Surveying and Mapping: A Manual of Simplified Techniques.** Irvington Publishers, Ardent Media, Inc., New York.
- Squier, Ephraim G., and Edwin H. Davis
 1998 **Ancient Monuments of the Mississippi Valley: Comprising the Results of Extensive Original Surveys and Explorations.** Reprint of 1848 book, edited by David J. Meltzer. Classics of Smithsonian Anthropology, Smithsonian Institution Press, Washington, D.C.
- Stewart, R. Michael
 2002 **Archaeology: Basic Field Methods.** Kendall/Hunt Publishing Co., Dubuque, IA.
- Sullivan III, Alan P. (editor)
 1998 **Surface Archaeology.** University of New Mexico Press, Albuquerque, NM.

Sundstrom, Linea

1993 A Simple Mathematical Procedure for Estimating the Adequacy of Site Survey Strategies. **Journal of Field Archaeology** 20(1):91–96.

Terrenato, Nicola, and Albert J. Ammerman

1996 Visibility and Site Recovery in the Cecina Valley Survey, Italy. **Journal of Field Archaeology** 23(1):91–109.

Wandsnider, LuAnn, and Eileen Camilli

1992 The Character of Surface Archaeological Deposits and Its Influence on Survey Accuracy. **Journal of Field Archaeology** 19(2):169–188.

White, Gregory G., and Thomas F. King

2007 **The Archaeological Survey Manual**. Left Coast Press, Walnut Creek, CA.

White, Joseph Courtney

1992 **In the Land of the Delight Makers: An Archaeological Survey in the American West**. University of Utah Press, Salt Lake City.

Willey, Gordon R., and Jeremy A. Sabloff

1995 **A History of American Archaeology**. 3rd ed. W.H. Freeman & Co., New York.

Wiseman, James R., and Farouk El-Baz (editors)

2007 **Remote Sensing in Archaeology**. Interdisciplinary Contributions to Archaeology. Springer, New York.

Glossary

Activity Area: a patterning of artifacts in a site indicating that a specific activity, e.g. flaked stone tool manufacture, took place there.

A.D.: used as a prefix to a calendric date, it denotes the number of years since the beginning of the Christian calendar (literally, *Anno Domini*, “Year of Our Lord”).

Aeolian: the process of sediments being deposited by wind, e.g., dune sand and loess; also, “eolian.”

Aerial Photography: photography from an airplane, based on the principle that a high viewpoint gives a clearer distinction between details, or of features, on the ground; supplements and facilitates site mapping.

Alluvial: the process of sediments being deposited by streams or running water, such as a river terrace; “alluvium” is the type of sediment deposited by alluvial means.

Archaeology: the study of the human past based on material remains.

Area: cultural area, often conforms to physiographic limits; can include contiguous regions sharing roughly similar cultural histories (e.g., American Southwest).

Artifact: any portable item made, used, discarded or transported by people.

Aspect: similar to a phase, a group of foci; more common usage refers to the direction of surface dip on an archaeological site.

Assemblage: any grouping of artifacts from a site, from one level of a site, from an activity area of a site, etc.

Association: the spatial relationship between an artifact and other artifacts and/or features in one level of a site.

Avocational Archaeologist: any volunteer who devotes his/her time to archaeology as an avocation or hobby rather than as a paid professional.

Azimuth: compass direction expressed in degrees of arc clockwise around the horizon, from 0° or 360° at true north to 90° due east, 180° due south and 270° degrees due west.

B.C.: used as a suffix to a calendric date to denote the number of years before the Christian era, literally “Before Christ.”

B.C.E.: calendric abbreviation meaning “Before the Common Era,” in our usage equivalent to dates given in years B.C.; see definition for C.E. below.

B.P.: used as a suffix to a date, usually derived by the radiocarbon method, expressed in years before A.D. 1950, literally “Before Physics” but generally translated as “Before Present” or simply “years ago.”

Cadastral Map: a legal map for recording ownership of property; French term, from the Greek *katastikhon* through Italian *cadastro*: notebook or line-by-line.

Catchment Area: the area from which the original inhabitants of an archaeological site retrieved most/all of their resources.

C.E.: calendric abbreviation meaning “Common Era,” i.e., dates referencing the calendar in common use. Most of the world uses the Gregorian Calendar, hence dates given in years C.E. are equivalent to those in years A.D.

Class: a grouping of artifacts, mostly based on function, such as metate or scraper; may be subdivided into stylistic types.

Colluvial: the process of sediments being transported down a slope largely by gravity, where they accumulate as “colluvium”; e.g., slope wash and talus deposits.

Component: an association of all artifacts and features believed to be roughly contemporaneous within a single level of a site; may include materials from multiple occupations.

Conservation Archaeology: a philosophical approach to archaeology which views material remains as scarce and non-renewable resources that must be conserved rather than squandered. Emphasis is placed on site location and survey rather than indiscriminate excavation and artifact collection.

Complex: a group of artifact assemblages represented at several contemporaneous components, usually within the geographic limits of a culture area; in simple terms, the entire tool kit of an archaeological culture.

Context: the position of an artifact or other archaeological find in time and space.

Cross-dating: dating of sites, or components of sites, by use of objects or artifact associations of known age.

Cultural Resource Management: the process of managing the archaeological resource base, typically spearheaded by archaeologists in public land managing agencies (usually abbreviated CRM).

Culture: a set of learned behaviors that help shape human responses to different situations; our primary means of adapting to our environment. In archaeological terms, an arbitrary construct including similar artifact assemblages and feature associations found in a multitude of sites within a defined context of time and space.

Datum point: a reference point on an archaeological site, normally surveyed onto a large-scale map and used as a base point for all site measurements; this location is usually permanently/semi-permanently marked in the field.

Demography: the study of the characteristics of human populations, in archaeology based on site size, room size and frequencies, storage space, etc.

Ecofact: an object whose natural shape mimics cultural modification (includes “*ooliths*”); also, organic and environmental debris which has cultural relevance such as food scrap, non-tool bone/antler/tooth/skin/wood, etc.

Eolian: see *Aeolian*.

Ethnoarchaeology: the study of contemporary (usually non-industrial) cultures for the purpose of understanding the human behaviors which produce visible material remains.

Ethnographic Analogy: an approach to interpreting archaeological patterns using evidence from comparable material patterns generated by the observed activities of modern societies.

Ethnography: in the field of cultural anthropology, any study of a contemporary culture based on first-hand observations.

Excavation: the deliberate, controlled recovery of buried remains in relation to the stratum and other associated objects in the original deposit. Careful measurement of horizontal and vertical positions of all finds is primary, along with detailed documentation of the burial context.

Feature: any non-portable human construction or refuse which cannot be moved without causing its alteration or destruction, e.g., a cache pit, soil stain, post hole, hearth, midden, room, wall, petroglyph panel, etc.

Field Archaeology: any survey, testing or excavation work in archaeology.

Focus: archaeological category roughly equivalent to a phase or industry, except with fewer temporal implications; most often used in Great Plains contexts, but falling into disuse in favor of phase.

Form Line: schematic contours on a field sketch map of an archaeological site; “eyeball” estimate of the local site topography not precisely measured.

G.I.S.: Geographic Information System, an application such as computer software used to create, analyze, map, and present spatial or geographical data. As used in archaeology, data such as site locations documented on a survey can be spatially compared to other mapped information such as topography, soil types, rock formations, water resources, modern developments, etc.

G.P.S.: Global Positioning System, a global navigation satellite system originally developed in the early 1990s by the U. S. Department of Defense, now widely used in civilian navigation and mapping applications. A network of 24–32 satellites transmits precise radio wave signals, which allow GPS receivers to determine their current location (as well as the time and their velocity, the latter not of much interest for archaeologists). On a survey, archaeologists most often use inexpensive GPS receivers to pinpoint the locations of sites and IFs on topographic maps with an error factor of 5–10 m. More precise “sub-meter” mapping requires augmentation methods such as Differential GPS (DGPS) that uses a network of fixed, ground-based reference stations to broadcast the difference between positions indicated by the satellites and the known fixed positions. Far more expensive, DGPS is more typically used in excavation projects than in archaeological survey.

Habitation: a “multiple activity” site type, implying long-term occupation of a site, in contrast to a camp, which is a shorter-term occupation still within the multiple activity category. Habitation sites, such as residential base camps in foraging societies and the masonry pueblos of the Southwest, should display very high artifact density and diversity as well as features such as architecture.

Historical Archaeology: the study of the material remains of any culture for which there are written records. In North America, the historic period begins with the arrival of Europeans but advances in translating Mayan glyphs in Central America push that culture’s history back 1800 years.

Horizon: mostly has spatial continuity, represented by traits and assemblages whose distribution permits the assumption of broad and rapid spread. Like aspect and focus, this is a term little used today but is much in evidence in older books and articles.

In situ: term for something found “in place” during excavation, i.e., discovered in position within a site, not sifted from sediment in a screen or in an unprovenienced collection.

Industry: cluster of artifact types believed to represent the remains of a prehistoric society; a group of assemblages in one region.

Isolated find: or “IF,” a tiny site representing a brief activity in the past; in Colorado such places are documented on one page forms.

Lithic: pertaining to stone, as in flaked or ground stone artifacts.

Locality: spatial unit larger than a site, smaller than a region, and small enough to permit the working assumption of cultural homogeneity at any given time (e.g., Canyon Pintado).

Locus: one of two or more spatially confined activity areas within a site or component of a site; often used on survey to subdivide the surface remains of a site being recorded.

Manuport: an artifact unmodified from its natural form and used in a way that does not alter its appearance.

Mapping station: a temporary field reference point used for producing site sketch maps, but whose location is not permanently marked.

Material culture: all the physical debris left behind by human activity, categorized by archaeologists as artifacts and features.

Metate: a large grinding slab typically used for milling seeds into a flour; used as a paired set with a more portable hand-held mano.

Midden: archaeological term for a concentrated trash deposit, a type of feature characteristic of repeatedly used rockshelters, long-term camps and habitations.

Mitigation: measures taken to moderate or alleviate the impact of destructive forces on archaeological sites and their information content, e.g., by controlled surface collection, instrument mapping, excavation, etc.

Non-Site Survey: an alternative process of systematically, thoroughly, and intensively searching a defined project area to discover and record archaeological artifacts and features. This approach— not commonly employed in Colorado (see Site Survey below)—records isolated or dispersed artifacts and features to the same degree of detail as clustered remains [sites], to produce both documents and maps depicting the distribution of all archaeological materials within a given block of land.

Period: refers solely to chronology; denotes when a specific developmental stage was represented in a given area (e.g., Archaic period).

Phase: a group of site components limited in space to a locality or region, and chronologically limited to a relatively brief period of time.

Plan Map: any technical drawing of a feature, excavation area or an entire site drawn from an overhead “bird’s eye” perspective; see *Sketch Map* below.

Pothunter: an individual who illegally digs sites for pottery and any other desirable artifacts, for personal gain. Context is ignored, no records are produced, and desecration of sensitive places such as burials is commonplace.

Prehistoric archaeology: study of the material remains of cultures who left behind no written records, or whose records have not been deciphered.

Provenance: the original source location of a material or artifact, moved by trade or direct transport.

Provenience: exact “3D” discovery location of an archaeological find within a site, including both horizontal and vertical position measurements.

Reconnaissance: a non-random sample survey making a cursory examination of a project area, e.g., to get a preliminary idea of archaeological site density or materials.

Region: geographic space in which, at any given time, substantial cultural homogeneity may be expected, but not counted on (e.g., Mesa Verde).

Residual: pertaining to those sediment accumulations that result from in situ weathering of local bedrock; minimal or no transport is involved in this process.

Resource: archaeological and historical sites are considered resources in the sense that they are non-renewable entities, valued in terms of cultural heritage.

Rock Art: general term for images made by people on boulders, rockshelter walls and ceilings, or cliff faces by pecking, incising, abrading (petroglyphs) and/or painting (pictographs).

Salvage: save from loss or destruction; many archaeological surveys are done to “salvage” cultural information about an area before land developments.

Sampling: the process of selecting a portion, piece, or segment regarded as representative of the whole, such as an archaeological survey of less than 100% of a project area, or an artifact collection of less than 100% of the surface remains.

Settlement pattern: study of the distribution of archaeological sites across the landscape, and within archaeological communities.

Site: any location with physical evidence of past human activity.

Site Survey: the process of systematically, thoroughly, and intensively searching a defined project area to discover and record archaeological sites. The common approach to a cultural resource inventory in Colorado, focusing on geographical clusters (sites) of past human activity.

Sketch map: a schematic plan view of an archaeological site using simple tools such as a compass and measuring tape rather than precision mapping instruments such as a transit.

Stage: segment of a historical sequence in a given area, characterized by a dominating pattern of economic existence (e.g., Formative stage).

Sterile soil: sediment that contains no traces or remains of human activity.

Stratigraphy: study of the stratification (layering) in rocks and soils, using the principle that older layers are more deeply buried than younger layers unless the deposit is disturbed.

Subarea: larger than a region, smaller than a culture area; cultural unity as in a region, but encompassing a larger area (e.g., Maya Lowlands).

Superposition: the deposition of one stratum (layer) on another, or the spatial overlap of a younger feature on an older one (e.g., petroglyphs).

Survey: the process of systematically, thoroughly and intensively searching a defined project area to discover and record archaeological sites.

Sweep: an arbitrary line walked across a site or project area. On a survey a sweep or “transect” is made by a crew to look for sites.

Topographic map: maps which use labeled contour lines to indicate surface form and elevation change. Features illustrated include cultural constructions, landforms, general vegetation and water sources.

Tradition: in artifacts, a group of complexes having primarily temporal continuity, represented by persistent patterns in single technologies, or other systems of related forms (e.g., Plano Tradition). In archaeological cultures, a major cultural grouping discerned in space which persists through time, characterized by definite patterning in subsistence practices, technology, world view, ecological adaptation, etc. (e.g., Plains Village Tradition).

Trait: any discrete element of human culture such as diet, social organization, mortuary practice, taboo, tool form, art style, religion, etc.

Transect: see “sweep” above; on a site, a *transect* method also may be employed as an artifact collection strategy.

Triangulation: a basic process used in the field to determine the exact location of an artifact, feature, datum or site. Compass readings are taken on three or more discrete landscape features that appear on the relevant topographic map, then

lines drawn on the map aligned to those readings should intersect at the location of interest.

Type: group of artifacts within a class sharing similarities in shape/style that are interpreted by archaeologists as having cultural significance.

U.S.G.S.: United States Geological Survey, the federal agency which produces and publishes the topographic maps most widely used in archaeology. Their 7½ minute maps are printed at a scale of 1:24,000, covering 7½' of latitude and 7½' of longitude on the earth's surface.

Vandal: individual who deliberately destroys or damages archaeological remains, including illicit excavation.

Useful References for Terms:

Cassells, E. Steve

1997 **The Archaeology of Colorado.** 2nd ed. Johnson Books, Boulder, CO.

Fagan, Brian M.

2009 **In the Beginning: An Introduction to Archaeology.** 12th ed.
MyAnthroKit Series. Prentice Hall, Upper Saddle River, NJ.

Kipfer, Barbara Ann (compiler)

2000 **Encyclopedic Dictionary of Archaeology.** Kluwer Academic/Plenum Publishers, New York, NY. [also see her web page:
www.archaeologywordsmith.com]

Renfrew, Colin, and Paul Bahn

2008 **Archaeology: Theories, Methods and Practice.** 5th ed. Thames and Hudson, New York, NY.

Shaw, Ian, and Robert Jameson (editors)

1999 **A Dictionary of Archaeology.** Blackwell Publishers Ltd., Oxford, UK.

Willey, Gordon R. and Philip Phillips

1958 **Method and Theory in American Archaeology.** University of Chicago Press, Chicago, IL.