

# The Grapevine

Newsletter

June 14, 1993

FOR CULTURAL RESOURCES MANAGEMENT

Vol 3:6

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## CALL FOR PAPERS

### FROM MARGIN TO MAINSTREAM

The 1st Biennial  
Rocky Mountain Anthropology  
Conference

For decades the area between the Front Range on the east, the Wasatch Mountains on the west, the confluence of the San Juan and Colorado Rivers on the south, and the Canadian Rockies on the north has been considered marginal to more easily defined cultural and geographical areas. In the Southwest, the Plains, the Columbia Plateau, and the Great Basin, anthropological research has been focused by conferences where participants could discuss common problems and detect similarities and differences in the subjects they study. No similar forum exists for what has often been called the "Great In-Between," and issues of particular interest to those working in the region are often ignored or only addressed tangentially. The Great In-Between needs to be recognized as a viable area of study, with problems and solutions unique to the region. The first biennial RMAC is intended to provide a forum in which such issues

can be discussed. It is time for margin to become mainstream.

Theme: Human Use of High  
Elevation Environments

Solicitation: Both symposia and individual papers are welcome. Symposia topics include: Mountain Linguistics; Fremont Fringe and Late Prehistoric Intensification; Ute/Shoshone ethnology and pre-history; Geoarchaeology and Paleoecology of the Uplands; The Greater Yellowstone Ecosystem; Rock Art in the Great In-Between; Management Issues in the Mountains; and Additional Papers on High Altitude Occupations.

The conference will be held September 30 through October 2, 1993, at the Virginian Saloon and Conference Center, Jackson, Wyoming. Deadline for Abstracts is August 15, 1993.

### Contacts:

### Symposia Proposals/Paper Titles:

David B. Madsen  
Antiquities Section  
300 Rio Grande  
Salt Lake City, Utah 84101  
☎ 801-533-3527

### Logistics:

Michael D. Metcalf  
Metcalf Archaeological Consultants

PO Box 899  
Eagle, CO 81631  
☎ 303-328-6244

### Local Arrangements:

Jamie Schoen  
Bridger/Teton National Forest  
PO Box 1888  
Jackson, Wyoming 83001  
☎ 307-739-5523.

## FOR YOUR INFORMATION

Beta Analytic, Inc., is changing the 12-month period on which the "Multi-Sample Rate Discount" (MSRD) is based to more closely reflect the academic year and field season. The new 12-month period will be from July 1st through June 30th. For the transition, Beta Analytic will extend 1993's sample totals for the MSRD through June 30th, 1994. This means the current MSRD will continue to be in effect for an uninterrupted 18-month period. For further information contact: Jerry J. Stipp or Murry A. Tamers, Beta Analytic, Inc., 4985 SW 74 Court, Miami, FL 33155, ☎ 305-667-5167/ FAX 305-663-0964.

## REQUESTS FOR INFORMATION

If you have information about preservation projects involving 20th-century building materials, or have historical information about a specific 20th-century building material, the National Park Service would like to hear from you. To help preserve 20th-century buildings, the Preservation Assistance Division is compiling information about 20th-century building materials, has set up a database, and plans to publish a directory. For more details, or forms on which to submit information, contact: Tom Jester, Preservation Assistance Division, National Park Service, PO Box 37127, Washington, DC 20013, ☎ 202-343-9587.

## INTERNSHIPS

The Ohio Historic Preservation Office is seeking student interns, offering real-work experience to undergraduate and graduate students

in art history, architecture, anthropology, history, planning, law, English, journalism, and design. Work can range from writing new releases, to maintaining the historic and archaeological inventories, to research for the state historic preservation plan, to assisting in rehabilitation project reviews. Although the internships are not paying positions, many students have been able to arrange course credit for their work, depending on school policies. For more information contact: Mary Beth Hirsch, Ohio Historic Preservation Office, ☎ 614-297-2470.

## BOOK REVIEWS

*Starting with the July issue, The Grapevine will include book reviews for new publications as a regular feature. Anyone wishing to submit a publication for review should allow at least three months for the review to appear. This will give our staff sufficient time to locate an appropriate reviewer and allow for that individual's schedule.*

## PUBLICATIONS

*The Underground* is the latest archaeology newsletter to come off the presses. "Written by and for people who live in motels," this publication is designed to provide a forum for discussion of issues relating to field

archaeology and to distribute new items of interest to field archaeologists. The editors hope that this newsletter will provide a way for "field techs" from all areas of the country to communicate and share information. Regular features include book reviews, project updates, and a humorous column entitled "The Worst Hotel I Ever Stayed In." All news items, gossip, articles, etc., are welcomed.

*This type of publication has been tried before and failed. Obviously, there is a continuing need for this type of newsletter. Let's hope they succeed.*

All newsletter contributions and inquiries should be sent to: **The Underground**, HCR 71, Box 11, Westport PA 17778.

*Prehistoric Ceramics of North Carolina: A Quick Tour of the Published Literature*, compiled by Jane M. Eastman. This booklet consists of brief descriptions of each ceramic type, the source of the original description, and suggested geographic and temporal ranges. Distributed to members of the North Carolina Archaeological Council by Coastal Carolina Research, Inc., this booklet is available to interested parties for a \$3.00 shipping and production fee. For further information contact Loretta Lautzenheiser, P.I., or Jane M. Eastman, Coastal Carolina Research, Inc., Tarboro, North Carolina 27886, ☎ 919-641-1444.

*An Archaeologist's Guide to Chert and Flint*, by Barbara E. Luedtke. Institute of Archaeology, University of California, Los Angeles, Archaeological Research Tools 7. Available through: Institute of Archaeology, 405 Hilgard Avenue, University of California, Los Angeles, CA 90024-7411



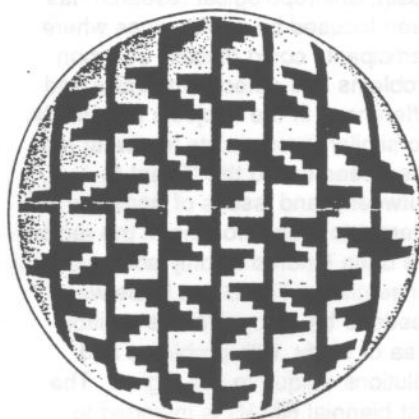
*Northern Anasazi Ceramic Styles: A Field Guide for Identification*, by William A. Lucius and David A. Breternitz. The Center for Indigenous Studies in the Americas, Publications in Anthropology No. 1, 1121 N. 2nd Street, Phoenix, AZ 85004, ☎ 602-253-4938. \$10.00 per copy, 40% discount on orders of 25 or more.

The Center for Indigenous Studies in the Americas is a nonprofit research organization dedicated to the promotion of the archaeology, anthropology, ethnology, and natural history of the New World. All proceeds from the sale of publications go toward supporting research programs.

### NORTHERN ANASAZI CERAMIC STYLES: A FIELD GUIDE FOR IDENTIFICATION

by

William A. Lucius  
and David A. Breternitz



Center for Indigenous Studies in the Americas  
Publications in Anthropology No. 1

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## CALENDAR OF MEETINGS

**July 26-31 - 15th International Conference for Caribbean Archaeology** will be held in San Juan, PR. For further information, contact: Miguel Rodriguez, Instituto de Culture Puertorriquena, Apartado 4184, San Juan, PR 00902-4184, ☎ 809-724-1844, FAX 809-724-8393.

**August 12-15 - 66th Pecos Conference - SW Archaeology** will be held at the Casa Malpais National Historic Landmark Site, Springerville, Arizona. Themes of this year's conference include: PaleoIndian, Archaic, Anasazi, Mogollon, Hohokam, MesoAmerican, Entrada, Historic, and Method and Theory. For further information contact: Dr. John W. Hohmann, Louis Berger & Associates, Inc., 5343 North 16 Street, Suite 260, Phoenix, AZ 85016, ☎ 602-2341124/FAX 241-1561, or Brian W. Kenny (Arizona State Land Department) ☎ 602-506-4608/FAX 506-4882.

**September 18, 1993 - Monongahela Conference** will be held at California University of Pennsylvania, California, PA. Requests for further information should be directed to John Nass, Dept. of Social Sciences, California University of Pennsylvania, California, PA 15419-1394.

**September 29-October 3 - The National Preservation Conference** will be held in St. Louis, Missouri. The theme will be the challenge of livable communities and the role of historic preservation in meeting this challenge. For information and a brochure contact: The National Trust, 1785 Massachusetts Ave. NW, Washington, DC 20036, ☎ 800-937-6847.

**September 30-October 2 - 1st Rocky Mountain Anthropology Conference** will be held at the Virginian Saloon and Conference Center, Jackson, Wyoming. This year's theme is: *Human Use of High Elevation Environments*. For information contact: Michael D. Metcalf, Metcalf Archaeological Consultants, PO Box 899, Eagle, CO 81631, ☎ 303-328-6244. Local Arrangements: Jamie Schoen, Bridger/Teton National Forest, PO Box 1888, Jackson, Wyoming 83001, ☎ 307-739-5523.

**November 3-6 - Southeastern Archaeological Conference (SEAC)** will be held at the Radisson Plaza Hotel, in Raleigh, North Carolina. For more information contact: Mark A. Mathis, Office of State Archaeology, 109 East Jones Street, Raleigh, NC 27601-3120, ☎ 919-962-6574, FAX 919-962-1613.

**November 4-7 - American Society for Ethnohistory** will hold its annual conference at Indiana University Memorial Union, Bloomington, Indiana. For further information contact: Douglas R. Parks or R. David Edmunds, American Indian Studies Research Institute, Indiana University, 422 N. Indiana Ave., Bloomington, IN 47405, ☎ 812-855-4086.

**January 5-9 - Annual Meeting of the Society for Historic and Underwater Archaeology**, Hotel Vancouver, Vancouver, BC, Canada. Contact: David V. Burley, Department of Archaeology, Simon Fraser University, Burnaby, BC V5A 1S6, Canada.

*If you have a meeting you would like to include on our calendar, The Grapevine will be glad to list it for you. Please remember to submit your listing by the 10th of each month.*

## AMENDMENTS TO THE NATIONAL HISTORIC PRESERVATION ACT: IMPLICATIONS FOR THE COAL INDUSTRY AND CULTURAL RESOURCE MANAGEMENT ARCHAEOLOGY

BY

Charles M. Niquette, President  
Cultural Resource Analysts, Inc.

### Introduction

The relationship between the National Historic Preservation Act (NHPA) and the Surface Mining Control and Reclamation Act (SMCRA) - and the effect of this relationship (or lack thereof) on individual permitting actions taken by state regulatory agencies - has been the subject of several rule-making petitions and multiple law suits during the past decade. Recent legislative and legal developments have brought us closer to a lasting interpretation of the relationship between the two statutes, but many problems have yet to be resolved. The purpose of this article is to review the history of the conflict and to provide a brief discussion of the forces afoot that may have an impact upon individual permit applications.

By way of review, readers will remember that Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on sites eligible for or listed on the National Register of Historic Places. The process by which a federal agency must consider the effect of its undertakings on significant archaeological and historic sites is detailed in the regulations of the Advisory Council on Historic Preservation Act (36 CFR Part 800). Briefly, there are only three ways by which a federal agency might comply with Section 106 of the National Historic Preservation Act: (1) the agency can follow the Advisory Council's regulations on a case by case basis, (2) the agency can develop counterpart regulations, or (3) the agency can enter into a program-wide Memorandum of Agreement (PMOA) which specifies those steps to be followed to ensure that significant historic properties are adequately considered.

### The National Trust Suit

As the readers may recall, the National Trust of Historic Preservation et al. filed suit against the federal Office of Surface Mining (OSM) in 1987. The preservation community took the position that the delegation of regulatory functions by the federal government to the states did not negate or obviate the federal government's mandated responsibilities with regard to historic preservation concerns. Specifically, OSM failed to comply with Section 106 of the National Historic Preservation Act of 1966 in the transfer of surface mining permitting functions, in annual funding of the state programs, and in the annual oversight of those programs.



At the same time, Industry filed suit against OSM saying that the agency had gone too far in this arena, that OSM in fact required too much of the states with regard to the identification and protection of archaeological and historic properties (Civil Action No. 87-1016). Industry complained that the responsibilities placed on applicants for state mining permits by OSM were burdensome, and Industry challenged a state's right to require archaeological surveys or to condition permits in such a way so as to prevent or mitigate impacts to known sites. OSM apparently felt the agency was striking a good balance. The logic was expressed to me by an OSM employee who said that the agency must be doing something right if both Industry and the preservationists were unhappy with them. Industry, OSM, and the National Trust filed cross motions for summary judgment.

Judge Joyce Hens Green rendered her decision on October 8, 1991 (Civil Action No. 87-1020). Green's 44-page decision reviewed the statutory background of the NHPA and of SMCRA and presented the factual background of the case. The Court concluded that the state permitting process is a federal undertaking, a conclusion supported by both the legislative history of SMCRA and by case law. She said that although the federal government does not dictate decisions made by individual state regulatory authorities, "OSM retains indirect jurisdiction over the state programs." She continued by stating:

OSM has delegated approval functions to the states, but the agency is required by statute to review the state programs. Moreover, federal grants to the states are "funneled" through OSM. It is this degree of authority that renders OSM ultimately responsible for ensuring that individual permit decisions comply with the requirements of Section 106...OSM cannot escape the duties imposed under Section 106 simply by delegating some of its duties to the states and yet still maintaining a powerful oversight role... Because the regulations promulgated by OSM on February 10, 1987, were based on the incorrect premise of the Secretary that permitting decisions in primacy states are not federal undertakings, and thus, defendants have failed to comply with Section 106, this matter will be remanded to the Secretary to take action to bring OSM into compliance with the NHPA, including, if appropriate, the promulgation of new regulations or a declaration that the present regulations apply to the state permitting process.

Judge Green concluded by denying Industry plaintiffs' motion for summary judgment and by denying OSM's motion to dismiss any cross-motions for summary judgment. She further declared that OSM failed to comply with Section 106 and that OSM's 1987 regulations also failed to comply with Section 106. In so doing, she ordered that the matter be remanded to the Secretary of the Interior to bring OSM into "prompt" compliance with the NHPA.

Judge Green's decision has been appealed. Coincidentally, new legislation has been passed that includes amendments to the NHPA. The amendments have a direct bearing on the case.

#### The 1992 Amendments to the NHPA

On October 30, the President signed into law the Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102-575). The Act included provisions for the construction, repair, and expansion of approximately 20 large water projects in 17 western states. Among other things, the Act provided for and emphasized a more balanced consideration of environmental and societal needs than that experienced previously under more traditional reclamation policies. This legislation reflected a strong concern for fish and wildlife protection and environmental quality issues in tandem with a recognition of urban water requirements. Of greatest interest to those involved with historic preservation issues as well as coal mining, Title XL of the Act amended the NHPA. Although Section 106 was not amended, a number of the amendments will affect the way Section 106 review is carried out under the regulations of the Advisory Council.

Previously, the regulations which implement Section 106 of the NHPA (36 CFR Part 800) defined a federal undertaking as any project, activity, or program, under the direct or indirect jurisdiction of a federal agency, or one that is licensed or assisted by a federal agency, that can result in changes in the character or use of historic properties.

Section 301(7) of Public Law 102-575 redefines the term "undertaking" as follows:

"Undertaking" means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including --

- (A) those carried out by or on behalf of the agency;
- (B) those carried out with Federal financial assistance;
- (C) those requiring a Federal permit, license, or approval; and
- (D) those subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency (emphasis added).

This definition expands the previous statutory definition and goes beyond that contained in the current regulations of 36 C.F.R. Sec. 800.2(o). In addition to encompassing all activities within the previous definition, the new language explicitly includes actions that require permits or approvals which are issued by State or local regulatory bodies pursuant to Federal law. This embraces those situations where a State or local agency is administering a regulatory program based on approval by a Federal agency or a delegation of regulatory authority made by a Federal agency. Examples include permits issued under the Surface Mining Control and Reclamation Act, the Coastal Zone Management Act, and the National Pollution Discharge Elimination System established by the Clean Water Act.

The amendments to the NHPA also introduce statutory language that essentially embodies the Advisory Council's stated policy regarding "anticipatory demolition," the intentional alteration or destruction of a historic property to avoid compliance with Section 106. The provision, a new Section 110(k), reads:

Each Federal agency shall ensure that the agency will not grant a loan, loan guarantee, permit, license, or other assistance to an applicant who, with intent to avoid the requirements of Section 106, has intentionally significantly adversely affected a historic property to which the grant would relate, or having legal power to prevent it, allowed such adverse effect to occur, unless the agency, after consultation with the Council, determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.

The statutory provision places an obligation on a Federal agency to withhold Federal assistance or permits from a non-Federal applicant when a historic property has been harmed intentionally before the Section 106 process has been completed. At first glance, this change in the law does not have an effect on the coal industry. Nevertheless, it might give one pause if you stop to consider the fact that any historic site over 50 years of age (circa 1943) might be considered potentially eligible for inclusion in the National Register of Historic Places. In the past, coal company engineers simply have placed an "X" over a house location shown on the mining reclamation plan map to show that the house has been demolished, i.e., bulldozed up into a pile and burned. This practice may now be challenged. Does the bulldozing of a ridgetop prehistoric hunting camp during coal exploration, or the demolition of an historic house during pre-permit timbering activity, jeopardize the sought-after permit for surface coal mining? It may. This change in the NHPA will force OSM and the Advisory Council to deal with the issue of anticipatory demolition and regulatory revision which might be expected at the state level.

Finally, Section 304 has been amended to specify more precisely the circumstances and procedures for withholding information about historic properties:

(a) The head of a Federal agency or other public official receiving grant assistance pursuant to this Act, after consultation with the Secretary, shall withhold from disclosure to the public, information about the location, character, or ownership of a historic resource if the Secretary and the agency determine that disclosure may--

- (1) cause a significant invasion of privacy;
- (2) risk harm to the historic resource; or
- (3) impede the use of a traditional religious site by practitioners.

(b) When the head of a Federal agency or other public official has determined that information should be withheld from the public pursuant to subsection (a), the Secretary, in consultation with such Federal agency head or official, shall determine who may have access to the information for the purpose of carrying out this Act.

(c) When the information in question has been developed in the course of an agency's compliance with Sections 106 or 110(f), the Secretary shall consult with the Council in reaching determinations under subsection (a) or (b).

This provision operates as an exemption to disclosure under the Freedom of Information Act and governs information that is developed during the Section 106 process and pursuant to any agreements developed under 36 CFR Part 800. It also applies to information that has been obtained prior to the enactment of the amendments. It remains to be seen how this amendment will affect the coal industry. It is possible that permit applicants may be asked to fund archaeological survey, but that the results of such surveys may be withheld on a need to know basis only. How can you hope to protect a site threatened by coal mining activity if the location of that site is withheld? With respect to Section (a)(3) above, what will happen when a Native American appears on the scene and claims that a coal mine inhibits his ability to practice his traditional religious activity? Who will evaluate the validity of such a claim and how will the evaluation be made? These questions are particularly vexing for certain eastern coal states that contain no resident population of federally recognized Native American groups.

#### Appeal of the Lawsuit

As noted above, Judge Green's decision has been appealed. Industry filed a motion to dismiss the appeal and to vacate Green's decision, arguing that the case had become moot as a result of the 1992 NHPA amendments. In response, OSM argued that the National Trust's suit challenging OSM's 1987 regulations was moot, but that the suit filed by Industry was not moot. The National Trust argued that neither case was moot, that the pending appeals should be dismissed, and that the case should be remanded to district court for further proceedings. In the National Trust's view, OSM's 1987 regulations were still in place and no effort has been made to modify them. As a result, the complaints raised in the original suit had not yet been addressed or abated in any way despite having won the case in court.

As these cross-motions readily demonstrate, the effect of the 1992 amendments to the NHPA cannot yet be determined. Moreover, it seems clear that the language of the amendments, in the absence of regulatory clarification, will remain open to speculation and disagreement. There is one point on which all of the parties agree, that is that the pending appeals should be dismissed. OSM says that the agency "would not oppose Industry's voluntary dismissal of its appeal." Industry must logically support dismissal of the appeals since it argues that all of the appeals are moot. Although the National Trust opposes Industry's motion on mootness, it would support dismissal of all appeals due to the clear-cut victory it received in district court.

#### Conclusions

The amendment to the NHPA will require a major revision to the Advisory Council's regulation. In addition, OSM will be forced by the Court to enter into new rule making. This process has already begun according to a notice published in the Federal Register (Vol. 57, No. 213:51502) on November 3, 1992. Because the state programs are expected to follow the federal model, individual state regulatory authorities like Kentucky's Department of Surface Mining or West Virginia's Department of Energy will also be required to modify their

permitting procedures. In the meantime, all permits issued by the individual state regulatory authorities are considered federal undertakings and must comply with the procedures outlined in 36 CFR Part 800. In the absence of counterpart regulations or a programmatic memorandum of agreement, this means each permit must comply with Section 106 on a case by case basis. To do otherwise opens a window of liability for any coal company to those who might use historic preservation issues as an effective club with which to control, block, or harass a coal operator.

Compliance with Section 106 need not be an onerous task. It simply requires the applicant to identify all archaeological and historic sites located within a permit area. Once identified, these sites must be evaluated to determine whether or not they are important, i.e., eligible for or listed in the National Register of Historic Places. If significant sites are located within the permit area, then the anticipated impacts caused by mining activity must be mitigated through project redesign and avoidance. If such significant sites are archaeological in nature, excavation and recovery of the data that contribute to the site's significance is also possible. In the case of standing structures, appropriate mitigation measures might include photographic documentation and/or measured drawings.

During this period of transition, a period in which most of the key players will be revising their regulatory framework, archaeological consultants and bureaucrats alike may wish to recommend a proactive approach toward archaeological compliance for the larger coal operators. Those who own large coal reserves that will be mined over the next five or even ten years may find it worthwhile to consider inventory-level surveys completed well in advance of the coal permitting process. Once all of the sites are located, and the archaeological consultant has provided a list of those sites that are most likely eligible for inclusion in the National Register, future permits could be designed to avoid these sites. If these Phase I level surveys are coordinated through the State Historic Preservation Office, and the resultant reports are reviewed and accepted by that agency, the proactive approach will be that much more credible when permit packages are assembled. To take such an approach will be far less expensive than a permit by permit approach. The cost of archaeological survey decreases on a cost-per-acre basis when large tracts of land are involved. Moreover, permit packages that are designed to sidestep potentially significant sites will ensure that most, if not all, Phase II National Register evaluations can be avoided; and therefore, costly data recovery mitigation efforts would not be required. In the meantime, the state and federal bureaucrats will continue to fine tune the manner in which applicants comply with both the NHPA and SMCRA. The surface coal mining applicant who knows in advance where his problem historic preservation areas lie will be well equipped to make informed decisions that maximize profits in the future.

## SAMPLING THE SUBJECT OF GEOARCHAEOLOGY

By Kathleen E. Callum  
GEOARCH  
Brandon, Vermont

The yearly advent of field season exhumes many old and new issues demanding the attention of archaeologists. Among them is the sometimes overburdening subject of geoarchaeology. This article provides a few tips from a practicing geoarchaeologist which may make the field season less demanding (All puns intended!). Although the tone may be a trifle flip, the subject matter is becoming increasingly important to archaeologists.

**What's in a Label?** The question of whether archaeologists should term the specialty "Geoarchaeology" or "Archaeological Geology" has been debated for well over a decade (e.g., Butzer 1982, Rapp and Gifford 1985, Davidson and Shackley 1978). This question is not just semantics; it revolves around research design, methodological procedure, interdisciplinary approaches, and even sample curation issues. Many practicing specialists prefer the label geoarchaeology and consequently actively campaign to become involved in archaeological projects from their incipient stages. Despite this, some agricultural soil science laboratories, often at local institutions, still receive a few soggy, out-of-context samples bearing the attached query "what is this ... material?" In addition, sparring field distinctions between sediment and soil(s), and overuse of the term subsoil still beset many projects. The antidote for such sampling and contextual issues originates with a label, continues throughout all phases of the project, and ultimately ends (rather than begins) in the laboratory.

**Research Design** A good geoarchaeological research design answers the relevant archaeological (or anthropological) issues by utilizing "methods and concepts of the earth sciences" (Butzer 1982). Communication between the archaeologist and specialist(s) is essential. The archaeologist should ask how disciplines such as geography, pedology, geomorphology, sedimentology, geochemistry, climatology, and others might assist toward achieving archaeological goals. The specialist(s) in turn must ask for (or map out) specific archaeological project goals. Waters (1992) recently published an excellent overview of a number of geoarchaeological goals and methodologies. Integration of geoarchaeology provides a solid foundation for future phases of any project.

**Methodology, Fieldwork & Sampling** The bulk of geoarchaeology literature is (quite correctly) methodologically oriented at this point in time. It is still a very young specialty. New concepts and techniques continue to flood from earth science fields into archaeology. One mission of a geoarchaeological specialist is to keep afloat of this literature and advise archaeologists of new and relevant techniques which address key archaeological concerns. Archival research and field work commence the nitty gritty phase of a geoarchaeology project. Specialists can spend as much time digging through literature, maps, and aerial photographs as sluicing through stratigraphy. Fieldwork evolves with a thorough description of context: geomorphology, stratigraphy, pedology, hydrology, environment, paleo-environmental indicators, archaeological chronology.



gy (on-site communication with archaeologists is critical), post-depositional processes, etc. Indeed, "The Geomorph" actually investigates much more than geomorphology.

Standard sediment sampling can fill storage shelves more quickly than a debris flow. Consider the research design again. Are the questions context-related? For example, what deposited site sediments? Sedimentological sampling for grain size, shape, and sorting may confirm field hypotheses by laboratory analysis. Are the questions chronologically-concerned? For example, how old are buried soil horizons? Stratigraphic sampling may provide both geochemical and datable organic samples, enabling chronological reconstruction of the landform. Are the questions related to lithic material type - is it really FCR? Selective sampling of rocks both on and off-site may provide answers on how local material types behave when fire altered.

Once the purpose of sampling has been delineated, there are methodological issues to consider. Geoarchaeological sampling can sometimes be accomplished concurrently with flotation sampling; both demand tight vertical and spatial context descriptions as well as off-site (or out-of-feature) control samples. For example, geochemical interests might be addressed by a combination of spatial and vertical site grids. Landform development and chronology may be elucidated by column sampling (e.g. continuous, intermittent, or selective sampling).

**Sample Extraction and Curation** This can be a muddy issue; following are some specific procedures to avert soiled plans. Samples should be taken in the most contaminant-free manner (plastic sampler cleaned with phosphate-free cloths) and stored in plastic zip-lock or whirl-pack type bags. All labels should be inserted into another bag so they don't come in contact with the sediment. If biologically active chemicals (such as nitrogen) are investigative goals, samples should be frozen. Otherwise, samples should be completely dried (covered with a woven cloth) at room temperature as soon as possible.

**Laboratory Analysis** Geoarchaeologists can choose from a bewildering landscape of laboratory analyses. For example, pedological texture and sedimentological grain size can both be utilized to arrive at sedimentary depositional processes. However, the entire spectrum of clay, silt, and sand measured in phi intervals (dry sieving only the sand fraction often falls woefully short) can allow precise interpretation where necessary. In another example, phosphate tests designed for agricultural purposes often do not extract anthropogenic phosphate. Laboratory analyses should be as carefully evaluated for their ability to resolve archaeological issues as research in any other phase of a project. Results can then be integrated within the context of a project and not appended to the back of an archaeological report like an eolian sedimentation afterthought!

#### References Cited

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- Rapp, George Jr., and John Gifford  
1985 *Archaeological Geology*. Yale University Press, New Haven.

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1992 *Principles of Geoarchaeology; A North American Perspective*.

## JOB ANNOUNCEMENTS

**GRAPHIC ARTIST** -- Gray & Pape, Inc., has a full-time position open for an artist to produce graphics (maps, site plans, profile drawings, etc.) for cultural resource management (CRM) technical reports. Management experience is preferred. Technical skills required include inking, layout, typesetting, knowledge of WordPerfect, and production of graphics for copier and color laser reproduction using "traditional" paste-up methods (i.e., light table and wax). Emphasis will be on organized, clean, and informative drawing (there is only an occasional need for illustration). In addition to the above skills, persons demonstrating experience in applications of various CADD programs to CRM reports will be given the highest consideration. Knowledge of offset printing is helpful for the occasional production of marketing materials. Gray & Pape, Inc., offers a competitive pay and benefits package, including paid holidays, paid vacation and sick leave, and health and disability insurance. After one year of employment, regular employees are eligible for a profit-sharing retirement plan. Send a current resume, three samples of visual work, and three samples of CADD applications (not to be returned) to Gray & Pape, Inc., 1318 Main Street, Cincinnati, Ohio 45210. An Equal Opportunity Employer.

**PRINCIPAL INVESTIGATOR** -- Gray & Pape, Inc., has an immediate position open for a Principal Investigator, specializing in prehistoric archaeology of the Midwest and/or Mid-Atlantic. An M.A. in Anthropology and previous experience in cultural resource management (CRM) supervision at the Principal Investigator-level, including an ability to assess resource significance according to federal and state guidelines, is required. In addition to expertise in prehistoric archaeology, this person must have sufficient knowledge of historic archaeology to be able to evaluate historic resources at the Phase I level of investigation. The ability to write clear, concise, and thorough CRM technical reports without extensive editing is required, as is the ability to manage multiple projects simultaneously. This person will also be asked to assist in the preparation of proposals and in marketing. Communication skills and an ability to effectively supervise people are a must. Knowledge of WordPerfect is essential; familiarity with database, spreadsheet, Geographic Information Systems (GIS), and CADD applications is preferred. Other skills that will be given serious consideration include knowledge of geomorphology, prehistoric artifact analysis, and/or faunal/floral analysis. Gray & Pape, Inc., offers a competitive pay and benefits package, including paid holidays, paid vacation and sick leave, and health and disability insurance. After one year of employment, regular employees are eligible for a profit-sharing retirement plan. Send a current resume, three references from persons in the CRM field, and an example of recent CRM technical writing (not to be returned) to Gray & Pape, Inc., 1318 Main Street, Cincinnati, Ohio 45210. An Equal Opportunity Employer.

**EDITOR'S CORNER****REMINDER TO CORPORATE SUBSCRIBERS!!**

By now all of *The Grapevine's* corporate subscribers should have received our corporate questionnaire, which was mailed to you earlier this month. Please complete and return your copy by July 15, 1993. Remember survey results will benefit all of us by providing a comparative base from which to evaluate your company's standing in the CRM community. Several responses have been received already. The larger the database the more accurate the survey results will be.

If by some oversight, your company did not receive the questionnaire, please let us know.

**ARCHAEOLOGICAL EQUIPMENT  
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## The Grapevine

### Subscription Information

**CORPORATE LISTINGS:**

**\$30.00** Each corporate subscription is entitled to be included in the newsletter's quarterly corporate listing for one year. This corporate listing, giving address, phone number, and contact person, will be printed at the back of these issues. New corporate subscription will be listed each month.

**INDIVIDUAL RATES:**

**\$20.00** An individual subscription includes one free monthly classified ad per year (request for information, special services, job announcement, or position wanted).

**ACADEMIC/GOVERNMENTAL RATES:**

**\$15.00** This newsletter is designed for private sector contractors. However, our colleagues from academic and governmental sectors are welcome to subscribe.

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1/2 page - horiz. 7" x 4 3/4 " vert. 9 5/8" x 3 3/8"	\$30.00	\$225.00
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1/4 page - 3 3/8" x 4 3/4"	15.00	115.00
1/6 page - 3 3/8" x 3 1/4"	10.00	75.00

Ads received by the 10th of the month will appear in that month's issue.

**Make checks payable to:**

**GRAY & PAPE, INC.**

**MAILING ADDRESS:**

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