

RECOMMENDED PROCEDURES FOR

ARCHAEOLOGICAL

IMPACT

EVALUATION

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INTRODUCTION

Passage of the National Environmental Policy Act (NEPA) in 1969, and the California Environmental Quality Act (CEQA) in 1970, has created a need for the development of objective standards for the identification and evaluation of environmental resources. Among such resources are prehistoric and historic archaeological sites, structures, and their settings. It is clearly a responsibility of the professional archaeological community to develop standards for dealing with archaeological resources that, if followed, will insure professionally and legally adequate results.

Late in 1972, in response to the California State Supreme Court's decision in the case of Friends of Mammoth vs. County of Mono, the Society for California Archaeology drafted an emergency memorandum to all agencies involved in environmental impact studies in California, providing recommendations for the efficient inclusion of archaeology in Environmental Impact Reports (EIRs) and Environmental Impact Statements (EISs). These recommendations were modeled after the "Guidelines for the Preparation of Statements on Environmental Impact on Archaeological Resources", prepared some months earlier by the Arizona Archaeological Center, National Park Service, with reference to the National Environmental Policy Act.

Recognizing, on the basis of experience with local governments attempting to cope with the results of the Mammoth decision, that the emergency memo did not provide sufficient guidance, the Society requested that the authors conduct a more thoroughgoing analysis of the problem and design a more comprehensive set of guidelines, consistent with emerging state policy. This booklet constitutes the requested guidelines, and is offered to Counties, Cities, Special Districts, and other agencies within California in the hope that it will be helpful in systematizing the inclusion of archaeology in EIRs and EISs.

In the interests of efficiency, we assume that users of this booklet will have access to ARCHAEOLOGY AND ARCHAEOLOGICAL RESOURCES, by C. R. McGimsey (1973) and LAWS AND POLICIES PERTINENT TO ARCHAEOLOGICAL IMPACT EVALUATION, by M. J. Moratto and T. F. King (1973); these publications provide basic definitions and considerations regarding archaeological resource management and the place of archaeology in environmental law and policy, which will not be restated here.

As used herein, the term "EIR" will refer to Environmental Impact Statements prepared under terms of the National Environmental Policy Act as well as to Environmental Impact Reports prepared under terms of the California Environmental Quality Act.

FEDERAL POLICY

Federal agencies have gone far toward developing consistent standards for archaeological impact evaluation. In the west, the National Park Service reviews EIRs prepared by federal agencies and agencies receiving federal assistance or permits. For information on formal criteria used in determining the adequacy of federal EIRs, the reader is referred to:

The Arizona Archaeological Center
U.S. Department of the Interior, National Park Service
P.O. Box 49008
Tucson, Arizona 85717

STATE POLICY

The California Environmental Quality Act of 1970 establishes the legislative intent to "preserve for future generations ... examples of the major periods of California history" (Public Resources Code Sect. 21001c). The "Guidelines for Implementation of the California Environmental Quality Act of 1970" reiterate this intent (Section 15011c), but are unspecific about what constitutes such an example or how to go about preserving it. In response to complaints about this ambiguity, the Secretary for Resources has indicated that archaeological resources should be considered in EIRs (Moratto and King 1973). The fact remains, however, that the state has provided little explicit direction on ways to determine whether a particular project may have impacts on archaeological resources. Similarly, in the case of Brown vs. Department of General Services (Sacramento S.C. #236723), the Superior Court commented that any environmental impact report prepared without inclusion of archaeological information "would be seriously deficient", but the case in question was not such as to require that criteria of sufficiency be promulgated. It is the purpose of this booklet to suggest some policies that we feel are realistic for most state subdivisions and agencies, and that can result in the efficient assessment and mitigation of impacts on archaeological resources. These recommendations are based on the policies developed by the National Park Service with reference to the National Environmental Policy Act and on our own experience with archaeological research, administration, and planning.

For information on formal criteria used in determining the adequacy of state EIRs, the reader is referred to:

The Cultural Resources Section
State Department of Parks and Recreation
P.O. Box 2390
Sacramento, California 95814

INADEQUATE POLICIES

To provide a basis from which to develop understandable recommendations, it will be useful first to summarize some inadequacies in policies that are currently in use.

The checklist: As a first step in environmental evaluation, responsible agencies will often ask applicants or project planners to fill out "Environmental Inventories" or "Assessments" - checklists of evident impacts that may result from the proposed project. On the basis of such a checklist, a decision will be made whether to require an EIR or to prepare a negative declaration. One item on the checklist is usually: "Will the project have an adverse effect on any known historic or archaeological site or its surroundings?" The inadequacy rests on the word "known", since the developer, planner, or engineer is given no way to "know" what sites may be affected. As a result, he relies on either his own ability to recognize something of archaeological significance - which is usually limited at best - or on whatever extant archaeological data he can assemble. Obviously very few developers or engineers are trained to recognize archaeological sites, and still fewer are capable of distinguishing between one that is worth saving and one that, for various reasons, may be insignificant. Extant files of archaeological data, as discussed below, very rarely provide adequate information on the archaeological resources of a particular project area.

"Historic" as "non-Indian": Another inadequate approach is to interpret the Environmental Quality Act's concern for "California history" very narrowly, and to restrict concern for historic sites to obvious historic structures. Fortunately this is a fairly rare approach; not only does it ignore the important scientific data to be gained from prehistoric sites in favor of the purely historical and aesthetic appeal of historic structures, but it selects against preservation of the history of California's entire Indian population, whose structures have long since become archaeological sites.

"Base maps and registers": All too frequently it is assumed that archaeologists, like some other scientists, have managed to compile complete records of the locations of all archaeological sites in the state or some subarea. EIR writers are accordingly directed to check the National Register of Historic Places or the files of the local planning agency or the Department of Parks and Recreation, the University of California, or some local historical agency. In fact, there are very few areas of the state (or nation) that have been fully surveyed by archaeologists, in which the locations and present conditions of all archaeological sites are actually known. The National Register, which has only been in existence a few years, is particularly incomplete, but state and local files are seldom much better. Typically they will include records of only those sites that have been recorded more or less by chance over the years - because they were close to roads, because someone happened to find them during a hike, or because they were reported when bulldozers began to churn up artifacts or human bones. Archaeologists have never had the funds to launch a comprehensive survey of the state, and have seldom even been able to survey small areas completely. As a result, there are only a few areas (mostly National and State Parks and some potential reservoir sites) where a check of the extant records will provide adequate data for planning or EIR purposes.

Local societies: Some agencies rely on local historical or archaeological societies or on local Indian tribes or organizations to provide

full data on archaeological resources for EIR purposes, without any provision for reimbursement to such groups for their services. While many (though not all) such groups are extremely conscientious and concerned about archaeological site protection, they very seldom have the funding or professional training to carry out full field evaluation of project sites, nor do they often have the training in environmental law and policy, or the professional credentials, to provide evaluations that would stand up in court. While it is certainly necessary and appropriate to consult such public organizations during preparation and review of EIRs, such consultation does not constitute full evaluation, unless the local society is sufficiently reimbursed to allow it to conduct a proper professional field study.

The regional survey: An increasing number of local agencies are calling for or planning regional surveys of archaeological resources, often in the context of open-space and conservation planning. On the basis of such surveys, which are to record all extant archaeological sites in the planning area, archaeological elements in future EIRs will be prepared. In the long run, this is undoubtedly the most efficient and intelligent way to proceed toward a rational program of archaeological resource management, but it obviously does nothing to take care of the immediate situation. Many important archaeological sites can be destroyed by current land-modifying projects while plans are being formulated for regional studies.

ESSENTIALS OF ARCHAEOLOGICAL EVALUATION

Experience has shown that unless an agency is dealing only with lands that have been fully surveyed by archaeologists in the past, the only way to insure adequate consideration of archaeological resources in project planning is to have a full field inspection of the subject property conducted by a qualified archaeologist. At a minimum, such an inspection should include a check of extant records on known prehistoric and historic sites on and around the property, and a visual inspection of the surface of the property. In some cases, particularly where natural or human agents have altered the land surface since prehistoric times, it may be necessary to conduct minor excavations by hand or machine to identify buried archaeological resources.

Any archaeological evaluation should include some consideration of both direct and indirect project impacts; for instance, one should consider not only those areas where actual construction will take place, but also those that may be opened up to intensive public use with a concomitant possibility for archaeological vandalism.

The evaluation should result in a report that describes the area reviewed, the methods of identification and analysis used, the resources discovered, the significance of these resources in terms of their scientific importance, and their possible value to the community, the predicted impacts of the proposed action on the resources, and recommendations for mitigation of all such impacts.

It is sometimes necessary to keep the exact locations of archaeological sites somewhat confidential, and to avoid widespread distribution of maps

showing such locations, to protect the sites from indiscriminate digging by artifact collectors and vandals. It may be efficient in such cases to publish only a verbal description of the sites in the EIR, along with a map showing areas surveyed or generally sensitive areas, retaining a map showing actual archaeological site locations in a file for planning purposes.

It is important to the scientific archaeological community to know what areas have been surveyed and what archaeological sites have been found. For this reason, the Society for California Archaeology has adopted a resolution calling for the filing of copies of archaeological evaluative reports with its District Archaeological Clearinghouses. Over a period of time this filing process will provide a body of consistent data on archaeological site distributions for use by planners and archaeological researchers alike. Failure to make such data available to one's professional colleagues is regarded by the Society as substantial evidence of unethical behavior. Agencies contracting with archaeologists for evaluations should recognize the need to file copies of reports with the District Clearinghouses, and archaeologists should make sure that their contracts allow for such filing.

It is obviously inefficient, however, to expect that every single project that requires an EIR should require an archaeological field inspection. Good judgement must be exercised by planners in deciding whether a given project area has a reasonably good chance of containing archaeological resources. Finding good rules of thumb to apply in making such decisions, however, is extremely difficult. As an example: we can assume that since human beings need water to survive, prehistoric occupation sites will normally be near water; thus a planner might assume that only those projects that are to occur near creeks or springs would require archaeological evaluation. However, there are cases on record in which major occupation sites have been located on ridge-crests far away from water, for defense or other purposes, with water being imported. Furthermore, some important kinds of human activities do not require water and may therefore occur in completely waterless areas, leaving distinctive signs; examples are ritual activities resulting in rock art sites, seed processing resulting in grinding stations, travel and trade leaving caches and trails, and so on.

The association between environmental variables such as water and topography and archaeological resources varies from region to region. On the basis of systematic field survey data, on a sample from a given region, it is often possible for archaeologists to construct "sensitivity" maps (see Fig. 1), predicting which sorts of lands are most likely to contain archaeological resources within the region. If it is not possible to construct such sensitivity maps, the local planner is left with little choice but to regard everything as potentially sensitive that has not been so severely disturbed that the survival of an archaeological site is highly unlikely.

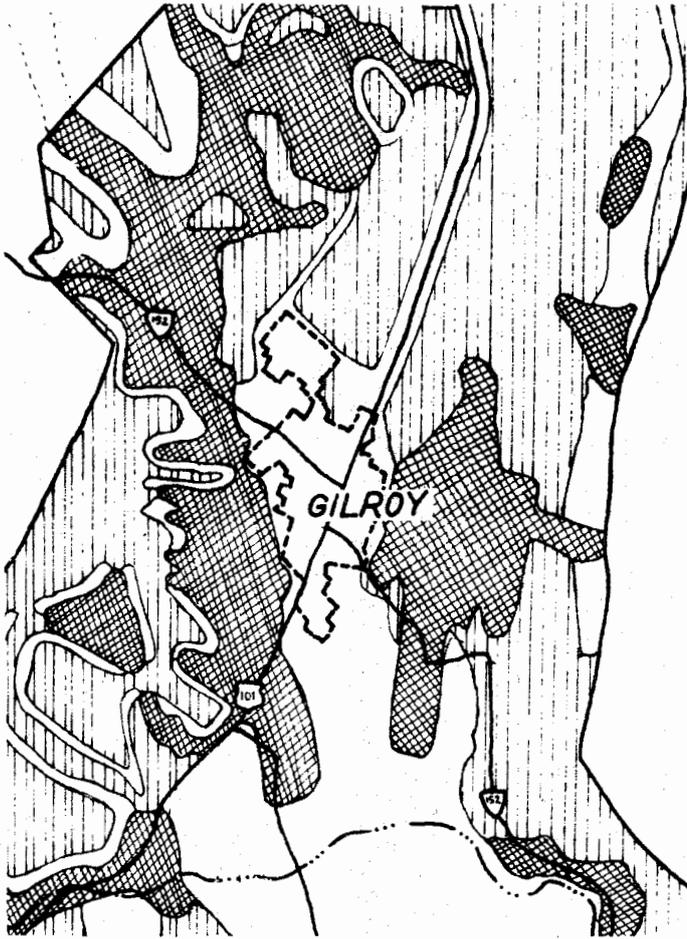


FIG. 1

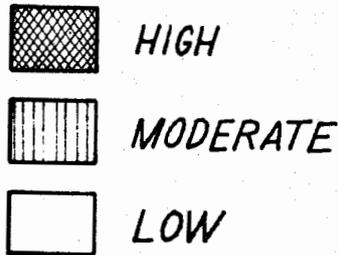
A SENSITIVITY MAP



SUGGESTED USE OF THE SENSITIVITY MAP:

1. Any project that will involve disturbance of previously undisturbed or minimally disturbed land-surfaces in a high-sensitivity zone should be subjected to archaeological field inspection prior to being permitted or undertaken.
2. Any major project that will involve disturbance of previously undisturbed or minimally disturbed land-surfaces in a moderate-sensitivity zone should be subjected to archaeological field inspection prior to being permitted or undertaken.
3. No project in a low-sensitivity zone should require archaeological field inspection, unless there is specific prior information suggesting that prehistoric sites are present, or unless the inspection is designed to identify and evaluate historic sites or structures.

ARCHAEOLOGICAL SENSITIVITY



CATEGORICAL EXEMPTIONS, ETC.

Some projects involving grading, trenching, research activities (including archaeological research), etc., considered to be categorically exempt from CEQA requirements under the State Guidelines, may nonetheless do serious damage to archaeological resources. The same observation applies to many projects that qualify for the preparation of a negative declaration rather than an EIR. Since various state and federal laws other than the CEQA apply to some kinds of archaeological sites (for example, Sections 8100 and 7052 of the California Health and Safety Code can be interpreted as forbidding the disturbance of Indian cemeteries), local agencies would be well advised to consider closely the possibility that a given project which may not require an EIR may still damage archaeological resources, and to arrange for field evaluation where possible and appropriate.

SUGGESTED METHODS FOR DETERMINING THE NEED FOR ARCHAEOLOGICAL EVALUATION

The first requirement in developing an effective method for archaeological resource management in the context of environmental law is to devise a simple method for determining whether a given project is likely to damage archaeological resources. If it is likely to do so, then a full field evaluation should be stipulated.

If possible, the local agency can have an archaeological sensitivity map prepared, such as the one shown in Fig. 1. Such a map should be based on field data that are as comprehensive and systematically gathered as possible (Fig. 1, for example, is based on a reconstruction of the pre-agricultural environment plus a field survey of about 20% of the total study area), and it should be prepared by or in consultation with professional archaeologists who have a good working knowledge of the area. If it is possible to have such a map prepared, then as a rule of thumb, any minimally disturbed or undisturbed property within a high-sensitivity zone should be subjected to field evaluation if modification of the land surface or increased public use are contemplated. In zones of moderate sensitivity, perhaps only projects requiring major EIR studies might need archaeological evaluation. In zones of low sensitivity, no archaeological evaluation might be required unless it was suspected that the specific property in question contained a historic or prehistoric site.

If sensitivity maps are lacking or impossible to produce on the basis of available data, the checklist provided below can be used by the planning agency to decide whether a field evaluation is appropriate.

RECOMMENDED ARCHAEOLOGICAL IMPACT CHECKLIST

Will the proposed activity or project:	YES	NO
A. involve disturbance of previously undisturbed or minimally disturbed* land surfaces?	_____	_____
B. involve off-site disturbance (access roads, etc.) of a similar nature?	_____	_____
C. open any previously little used land to use by the public or some segment thereof?**	_____	_____
D. temporarily or permanently increase the population of any sparsely inhabited area?**	_____	_____
E. be restricted to properties known to contain no archaeological resources?	_____	_____

If the answer to any one of questions A - D is YES, and if the answer to question E is NO, an archaeological impact evaluation is necessary.

*Many agricultural land uses, many kinds of residential construction, and many kinds of roads, parking lots, etc., especially if constructed before heavy excavating equipment came into general use, may have modified the surface of the ground but left archaeological data undisturbed at depth.

**A certain percentage of any population is likely to engage in artifact collecting and vandalism of archaeological sites. Any activity that improves public access or increases public use of an area is thus likely to result in destruction of archaeological resources. Further, any such project may act as a catalyst to further development and use of the area, with concomitant damage to archaeological resources.

NOTE: IN MOST AREAS THIS CHECKLIST WILL ONLY BE APPROPRIATE FOR PROJECTS THAT DO NOT QUALIFY AS CATEGORICAL EXEMPTIONS UNDER THE STATE GUIDELINES. IN AREAS OF EXTREME ARCHAEOLOGICAL SENSITIVITY, HOWEVER, COMPLETION OF SUCH A CHECKLIST MAY BE APPROPRIATE ON ANY PROJECT.

DETERMINING AND REPORTING ARCHAEOLOGICAL IMPACTS

The function of an archaeological impact evaluation, as a part of an EIR or any other element of general planning, is to provide the agency responsible for conducting or approving the subject action with enough data to permit a balanced decision to be made about the feasibility of the proposal. In order to provide such data, archaeologists should be specific about their own qualifications and about the methods they use. They should be as explicit about the location and extent of discovered archaeological resources as possible, with due consideration for the safety of the resources. They should fully evaluate any discovered resources in terms of their scientific and other significance, and they should determine potential project impacts and recommend precise means of mitigation.

The following guidelines are directed toward archaeologists conducting field evaluations, but they also should provide planners with a basis for evaluating reports received from archaeologists.

RECOMMENDED GUIDELINES FOR PREPARATION OF ARCHAEOLOGICAL IMPACT EVALUATIONS

Archaeological impact evaluations should answer at least the following questions:

A. WHAT IS THE LOCATION AND NATURE OF THE PROJECT, with maps showing (a) areas of direct and indirect impact, and (b) areas surveyed.

B. UPON WHAT KIND OF STUDY ARE THE DATA BASED? What documentary sources were used? What local or other informants were consulted? For field work, assign the study approach to one or more of the following categories:

- I. Preliminary Field Reconnaissance: a relatively superficial examination of the impact area for the purpose of gaining a general understanding of the kinds of cultural and related phenomena present there.
 - a. Uncontrolled intuitive reconnaissance: "spot-check" of "likely" areas for human habitation based on general criteria like slope, nearness to water, etc.
 - b. Controlled intuitive reconnaissance: "spot-check" of areas known to be "likely" ones for archaeological resources based on intimate familiarity with local settlement patterns.
 - c. Controlled sample reconnaissance: survey of a stratified random sample of the area, or use of some other device for insuring statistical predictability (specify).
- II. Intensive Field Reconnaissance: comprehensive examination of an area to gain detailed information on all classes of archaeological

and related phenomena occurring there, including test excavation where necessary to define site boundaries or other critical characteristics.

- a. General surface reconnaissance: inspection of all land surfaces that can reasonably be expected to contain visible archaeological resources. Every portion of the study area whose surface can be seen without major modification of the vegetation or structural cover, and where it is reasonably possible that human activities that would leave traces might be carried out, is inspected in a general surface reconnaissance. Every foot of ground is not necessarily covered. A general surface reconnaissance is the functional equivalent of a complete reconnaissance (IIc) in areas where soil, vegetation, or other conditions make it highly unlikely that some kinds or archaeological phenomena would be preserved, or where surface conditions obscure such phenomena to a point at which they could not be observed without undertaking large-scale brush clearing, grading, etc.
- b. Controlled sample reconnaissance: same as Ic above; appropriate for intensive field testing surveys of very large areas only, and never adequate for determining the specific impact of particular installations.
- c. Complete reconnaissance: an investigation of every visible portion of the impact area.
- d. Subsurface reconnaissance: excavation of test units, extensive auger-boring, mechanized cutting, or other methods of exploring beneath the surface of the ground (other than routine small auger-borings, inspection of stream cuts, etc.).

III. Mixed Strategy Reconnaissance: in some areas it may be appropriate to utilize different approaches in different parts of the study, e.g., complete reconnaissance of the project area itself, controlled intuitive reconnaissance of indirect impact areas; or complete reconnaissance of all fairly flat land, controlled intuitive reconnaissance of grassy slopes of more than 25%, etc. The different kinds of reconnaissance utilized should be specified, as should the reasons for employing them.

C. WHAT CONDITIONS OF THE STUDY AREA MAY HAVE AFFECTED THE VALIDITY OF YOUR OBSERVATIONS? Is there heavy siltation? Dense grass? Poison oak? Other factors that made it impossible to inspect the ground fully or identify archaeological resources if present?

D. WHAT HISTORIC AND PREHISTORIC ARCHAEOLOGICAL RESOURCES, IF ANY, MAY BE DIRECTLY THREATENED BY THE PROPOSED PROJECT? What sites or other archaeological phenomena may be damaged by construction of the project or by access roads, borrow sources, and other activities directly associated with the project?

E. WHAT HISTORIC AND PREHISTORIC ARCHAEOLOGICAL RESOURCES, IF ANY, MAY BE INDIRECTLY THREATENED BY THE PROPOSED PROJECT? Will the project possibly increase artifact collecting and vandalism in the area, temporarily by

bringing in construction crews, permanently by bringing in new population? Is it likely to act as a catalyst for further development that may damage archaeological resources? Might it result in changes in erosional, traffic, or land use patterns that could result in site destruction?

F. WHAT IS THE SIGNIFICANCE OF THESE RESOURCES (listed in C&D) IN TERMS OF:

- I. Long-range anthropological or historical research? What is the importance of this area's prehistory or history to our understanding of human behavior and/or general culture history?
- II. Local scholarly and public interests? What is the significance of this area's archaeology in terms of the research designs being followed by local scholars and in terms of the educational and preservationist interests of the local community?
- III. Their intrinsic cultural value? Are they typical of some particular cultural group or activity? Do they represent the entire, best extant, or only surviving vestiges of some cultural group? A major village? A unique site of some kind? A sample of a particular kind of fast-diminishing archaeological phenomenon?
- IV. Public interpretation? Is the archaeology of the area suitable for use in an archaeological park or other educational or recreational facility?
- V. Special interests? Is the site of religious, historical, or cultural importance to any segment of the local community? Is it a cemetery? A shrine?

G. WHAT IS THE LEGAL SITUATION OF THESE RESOURCES? Are they listed on or being considered for the National Register of Historic Places or for state, county or municipal inventories? Are there federal, state, or local statutes protecting them and/or limiting the means by which impact on them might be mitigated?

H. HOW CAN EACH NEGATIVE DIRECT AND INDIRECT IMPACT ON THE RESOURCES BE MITIGATED? Can the project be designed to avoid impact on the resources? Can they be somehow protected by the construction or activity itself (e.g. by burial under an elevated platform type construction)? Is "salvage" excavation or other research necessary and appropriate?

I. WHAT POSITIVE IMPACTS OF THE PROJECT ON ARCHAEOLOGICAL RESOURCES ARE POSSIBLE? Can the project serve to protect resources that are now suffering impacts? Can it help interpret these resources for public education with minimal damage to the resources? Can it provide long-term facilities or services to local professional or community archaeology programs? Will it direct population growth away from important archaeological resources?

J. WHAT ARE YOUR QUALIFICATIONS FOR MAKING THIS EVALUATION? Indicate your degree, where and when it was obtained, your institutional and/or organizational affiliation, and your experience in archaeology, impact evaluation, and related matters.

NOTE: IN SOME CASES IT MAY BE APPROPRIATE TO SUMMARIZE THE DATA OUTLINED ABOVE IN THE ACTUAL EIR, BUT IN ALL CASES REFERENCE SHOULD BE MADE TO THE COMPLETE REPORT, WHICH SHOULD BE FILED IN A LOCATION TO WHICH QUALIFIED SCHOLARS AND APPROPRIATE REVIEWERS HAVE ACCESS. PRECAUTIONS SHOULD BE TAKEN TO AVOID TOO WIDE DISTRIBUTION OF PRECISE DATA, INCLUDING MAPS, SHOWING THE LOCATIONS OF ARCHAEOLOGICAL SITES, TO REDUCE THE DANGER OF VANDALISM. ONE COPY OF YOUR REPORT, TOGETHER WITH A MAP SHOWING LANDS SURVEYED AND ARCHAEOLOGICAL SITES LOCATED AND STANDARD ARCHAEOLOGICAL SITE FORMS ON ALL SITES RECORDED, SHOULD BE FILED WITH THE SOCIETY FOR CALIFORNIA ARCHAEOLOGY CLEARINGHOUSE RESPONSIBLE FOR DATA IN YOUR STUDY AREA.

IMPACT MITIGATION

In many cases, if archaeological studies are done while projects are still in early planning stages, it will be possible to modify the projects in such a way as to preserve archaeological resources at minimum expense and inconvenience. Examples of such mitigation include:

1) inclusion of archaeological sites in parks or open space, with appropriate protection against vandalism and later disturbance. Parks can be designed in such a way as to obscure sites in landscaping or to include them in limited use areas where it would be unfeasible for vandals to dig. Archaeological sites in privately held open space can be protected by restrictions on their disturbance written into deeds.

2) use of archaeological sites for nondestructive public interest purposes. Some kinds of sites are easily useable as "outdoor museums", where with minimal investment in protective and interpretive structures the public can be permitted to view them and learn from them about the historic or prehistoric uses of the project area.

3) placement of fill, buildings, or pavement over sites without seriously damaging them. Unfortunately, little information is currently available on the effects of site-burial; compaction or subtle changes in the soil chemistry may result in destruction of important data. Nevertheless, burial in many cases may prove to be the best way of maintaining sites in a sort of "bank" for investigation hundreds or thousands of years in the future.

If preservation of archaeological resources is not possible, the only other feasible possibility is to accelerate research at such sites, to "salvage" excavate them before their destruction. Such excavations should always be done by qualified professionals, materials and data recovered should be safely stored with an appropriate institution, and all such materials and data should be fully analyzed, leading to publication of the results of the research. This is a much less acceptable means of "preserving" data than those mentioned above, since it leaves little for future generations who should be more skilled and have access to better archaeological methods than we. EXCAVATION SHOULD BE CONSIDERED A LAST RESORT. It should also be clearly recognized that it is very seldom possible for archaeologists to undertake proper salvage excavations without financial support; universities, colleges, and museums are not funded to provide free services to private enterprise. The cost of salvage excavation must be borne by the agency responsible for the damage.

Indirect impacts are much more difficult to mitigate. Major indirect impacts on archaeological resources typically result from increased service activity in the environs of the project (installation of power lines, construction of roads, etc.), general induced growth (change in tax rate and other factors resulting in increased lot splitting, single-family homebuilding, etc.), and vandalism concomitant upon the increased population of subdivided areas. The problem of long-range growth induced impacts on archaeological resources must be recognized by public land use

policy; historical zoning, public purchase of representative archaeological sites for open space and parks, and granting tax relief to owners willing to protect such sites might be considered. Stopping vandalism is primarily an educational problem; one approach to its control might be to require that firms whose activities will result in indirect archaeological impacts contribute to a fund whose purpose would be to support community avocational archaeological groups and other educational devices that could direct people away from vandalism and personal artifact collecting and toward responsible archaeological citizenship. On the level of individual projects, news releases during construction could address comments to the value of sites (hopefully preserved within the project itself) and to laws concerning their protection. Protection of sites within project areas can in some cases be effectuated through their use as public interest loci, where vandalism can be discouraged and concern for archaeological conservation promoted.

OBTAINING QUALIFIED ARCHAEOLOGICAL ASSISTANCE

The more highly qualified one's archaeological consultants, the less likely one is to face legal challenges and other embarrassing situations. By and large, qualified archaeological consultation cannot be provided for free. Only in the very few areas of California that have been completely surveyed by archaeologists is there no need for ground checks, and such checks invariably take time that must be paid for by those potentially benefiting from the proposed project. Though it is sometimes possible to get archaeological field work done for no cost, it is seldom possible to get it done well. Especially in cases that may result in public controversy and/or court action, the responsible agency or firm is well advised to obtain the best possible professional services.

Some counties and other entities are employing or considering employing their own archaeologists. We suggest that such employment is best done via contract with a local archaeological institution if at all possible. This appears to be less costly for the agency involved, and insures that impact studies will be made in consonance with ongoing archaeological research programs, with access to the best possible bodies of expertise and data.

Some planning firms are also employing their own archaeologists. While this practice is not to be discouraged, we strongly suggest that these employees be regarded as administrators and facilitators, not as persons competent to do any and all archaeological evaluations anywhere such work is needed. To identify, and even more, to evaluate archaeological resources in a given area requires a fairly intimate familiarity with the archaeology of that area; to evaluate any archaeological resource in terms of its long-range scientific value requires extensive and up-to-date knowledge of anthropology. Such knowledge normally resides in the academic community, and that community appears usually to be the best source to tap for consultation purposes.

For specific advice on local archaeologists competent to conduct archaeological impact evaluations, we suggest contacting the State Department of Parks and Recreation and/or the Society for California Archaeology's District Clearinghouses, which are listed in the appendix.

Some general attributes to look for in an archaeological consultant include:

A. EXPERIENCE: Has the consultant had experience in archaeological field work, particularly in impact evaluations or other kinds of archaeological surveys?

B. AFFILIATION: Is the consultant affiliated with an institution or organization with demonstrable archaeological qualifications?

C. LOCAL EXPERTISE: Does the consultant's experience include research in the general area of the planned evaluation?

D. DEGREE OR TRAINING: Does the consultant or his supervisor possess an advanced degree (preferably PhD) in anthropology with an emphasis in archaeology, or does he have equivalent training?

E. PUBLICATIONS: Does the consultant's publication record indicate wide experience and education in anthropology and archaeology, knowledge of environmental impact problems, and a responsibility for reporting his research?

No one of the above criteria needs to be considered absolutely essential to the definition of an adequate archaeological consultant, but we feel that as a general rule of thumb, at least three or four of them should be required.

SUMMARY

On the preceding pages we have discussed the general criteria for adequate archaeological impact evaluation and have provided specific recommendations for determining the need for such evaluation, conducting evaluations, and judging the adequacy of such evaluations once they have been completed. We have also suggested some approaches to the mitigation of archaeological impacts, and provided some suggested criteria for judging the competence of potential archaeological consultants. We hope that these recommendations will be useful to planners and archaeologists alike in developing systematic and efficient means of evaluating and protecting archaeological resources. In conclusion, we must caution that these recommendations have been prepared in accordance with environmental law and policy as written and interpreted in the latter part of 1973; changes and updates are to be expected as time goes by. For further information we suggest contacting the Society for California Archaeology's District Clearinghouses, listed in the appendix.

REFERENCES

McGimsey, C.R. III

1973 ARCHAEOLOGY AND ARCHAEOLOGICAL RESOURCES. Society for American Archaeology, Washington.

(A basic informational guide to archaeology in land-use and environmental planning. For copies, address the Committee on Public Archaeology, Society for American Archaeology, c/o Arkansas Archaeological Survey, University of Arkansas Museum, Fayetteville, Arkansas.)

Moratto, M.J. and T.F. King

1973 LAWS AND POLICIES PERTINENT TO ARCHAEOLOGICAL IMPACT EVALUATION. Society for California Archaeology, Fullerton.

(IN PRESS: A compilation of pertinent U.S. and California laws, federal and state agency policies, etc. Available early 1974. For copies, address the Society for California Archaeology, c/o Department of Anthropology, California State University, Fullerton, Fullerton, California.)

For further background information, see:

McGimsey, C.R. III

1972 PUBLIC ARCHAEOLOGY. Seminar Press, New York.

(Full information on federal legislation concerning archaeological resources, evaluations of federal agency and state programs, nationwide.)

Moratto, M.J.

1973 THE STATUS OF CALIFORNIA ARCHAEOLOGY. Society for California Archaeology, Fullerton.

(A general discussion, with examples, of archaeological destruction in California, the state's various archaeological programs, etc. County-by-county listing of estimated original number of prehistoric sites, extent of destruction, surviving resources, etc.)

APPENDIX

SOCIETY FOR CALIFORNIA ARCHAEOLOGY - DISTRICT CLEARINGHOUSES

The institutions listed below maintain files of information on archaeological resources in their respective Districts (See map) and have knowledge of competent archaeological consultants in each District.

<u>District</u>	<u>Institution</u>
01 - Northwest	Dept. of Anthropology, California State College, Sonoma, Rohnert Park, CA 94927. Primary Phone (707) 795-2312; Secondary Phone 795-2381.
02 - Northeast	Dept. of Anthropology, California State University, Chico, Chico, CA 95926. Phone (916)345-6192.
03 - North-Central	Dept. of Anthropology, University of California, Davis, Davis, CA 95616. Primary Phone (916) 752-1011; Secondary Phone 752-1594.
04 - Bay Area	Dept. of Anthropology, San Francisco State University, San Francisco CA 94132. Primary Phone (415)469-2270; Secondary Phones 469-2046 and 469-1642.
05 - South-Central Coast	College V, University of California, Santa Cruz, Santa Cruz, CA 95064. Primary Phone at Cabrillo College, District Coordinator: (408)475-6000; Secondary Phone 429-2951.
06 - Southern San Joaquin	Dept. of Anthropology, California State University, Fresno, Fresno, CA 93710. Phone (209)487-1002.
07 - Los Angeles Region	Archaeological Survey, University of California, Los Angeles, Los Angeles, CA 90024. Phone (213)825-7411.
08 - Desert and 09 - Eastern California	Archaeological Research Unit, University of California, Riverside, Riverside, CA 92502. Phone (714) 787-3885.
10 - South-Central	Dept. of Anthropology, California State College, Stanislaus, Turlock CA 95380. Phone (209)634-9101 ext.227.

11 - South Coast

Dept. of Anthropology, San Diego
State University, San Diego, CA
92115. Phone (714) 286-6300.

12 - Channel

Dept. of Anthropology, Santa Barbara
Museum of Natural History, 2559
Puesta del Sol Road, Santa Barbara,
CA 93105. Phone (805)936-7821.

Note: Archaeologists in the above institutions provide advice and information to concerned parties above and beyond their regular institutional responsibilities. They receive no remuneration from the Society. When contacting a Clearinghouse for information or recommendations, please provide as much time and assistance as possible to the archaeologist responding to your request.

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