



**US Army Corps  
of Engineers**

Waterways Experiment  
Station

Technical Report EL-97-5  
April 1997

*Evaluation of Environmental Investments Research Program*

# **Trends and Patterns in Cultural Resource Significance:**

## **An Historical Perspective and Annotated Bibliography**

*by Frederick L. Briuer, Clay Mathers*

**WES**

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Prepared for Headquarters, U.S. Army Corps of Engineers

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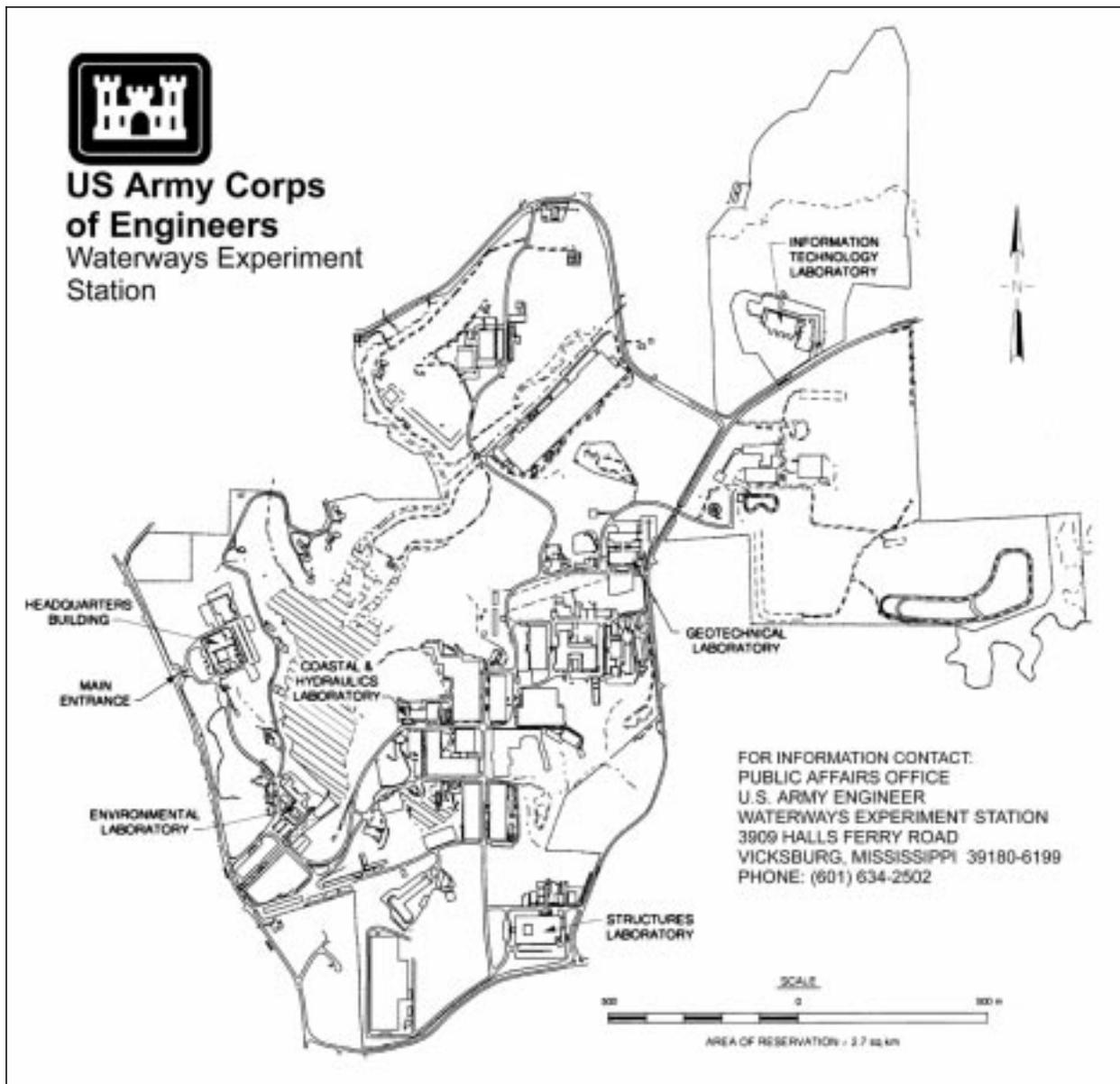
# **Trends and Patterns in Cultural Resource Significance:**

## **An Historical Perspective and Annotated Bibliography**

by Frederick L. Briuer, Clay Mathers  
U.S. Army Corps of Engineers  
Waterways Experiment Station  
3909 Halls Ferry Road  
Vicksburg, MS 39180-6199

Final report

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### Waterways Experiment Station Cataloging-in-Publication Data

Briuer, Frederick L., 1942-

Trends and patterns in cultural resource significance : an historical perspective and annotated bibliography / by Frederick L. Briuer, Clay Mathers ; prepared for U.S. Army Corps of Engineers. 193 p. : ill. ; 28 cm. — (Technical report ; EL-97-5)

Includes bibliographic references.

This report will be available only on the Internet.

1. Historic preservation. 2. Cultural property — Protection. 3. Cultural property —Bibliographies. I. Mathers, Clay. II. United States. Army. Corps of Engineers. III. U.S. Army Engineer Waterways Experiment Station. IV. Environmental Laboratory (U.S. Army Engineer Waterways Experiment Station) V. Evaluation of Environmental Investments Research Program. VI. Title. VII. Series: Technical report (U.S. Army Engineer Waterways Experiment Station) ; EL-97-5.

TA7 W34 no.EL-97-5

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# Preface

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The work reported herein was conducted as part of the Evaluation of Environmental Investments Research Program (EEIRP). The EEIRP is sponsored by the Headquarters, U.S. Army Corps of Engineers (HQUSACE). It is jointly assigned to the U.S. Army Engineer Water Resources Support Center (WRSC), Institute for Water Resources (IWR), and the U.S. Army Engineer Waterways Experiment Station (WES), Environmental Laboratory (EL). Mr. William J. Hansen of the Institute for Water Resources is the Program Manager and Mr. H. Roger Hamilton is the Waterways Experiment Station Manager. Technical Monitors during this study were Mr. John W. Bellinger and Mr. K. Brad Fowler of Headquarters, U.S. Army Corps of Engineers. The Field Review Group members that provide overall Program direction and their District or Division affiliation are: Mr. David Carney, New Orleans; Mr. Larry M. Kilgo, Lower Mississippi Valley; Mr. Richard Gorton, Omaha; Mr. Bruce D. Carlson, St. Paul; Mr. Glendon L. Coffee, Mobile; Ms. Susan E. Durden, Savannah; Mr. Scot Miner, San Francisco; Mr. Robert F. Scott, Fort Worth; Mr. Clifford J. Kidd, Baltimore; Mr. Edwin J. Woodruff, North Pacific; and Dr. Michael Passmore, Walla Walla.

The Waterways Experiment Station principal investigator for this work unit was Dr. Frederick L. Briuer. The Institute for Water Resources co-principal investigator was Mr. Darrell Nolton. This report is authored by Drs. Frederick L. Briuer and Clay Mathers. Mr. Gary A. Hebler, a contract student at WES, contributed significantly to this work as a research assistant, compiling annotated citations, preparing graphs and tables, and resolving a variety of technical problems. Mr. Hebler's participation in the project has provided him with the opportunity to develop ideas and research experience that relate directly to his Master's thesis on archaeological resource management at Ball State University in Muncie, Indiana. Research assistance in collecting sources and compiling annotations was also provided by Mr. Evan Peacock at Mississippi State University and Mrs. Natalie Maillho at Tulane University. Mr. David Redd, an anthropology student at the University of Southern Mississippi, worked closely with the authors to proof the manuscript and assist in general editing and clerical tasks in the final stages of writing. We would also like to extend our thanks to Mr. Richard Waldbauer and Ms. Beth Savage at the Archaeological Assistance Division of the National Park Service in Washington, D.C., for their help in supplying information concerning various National Register Bulletins.

Special thanks go to the following attendees at the Corps of Engineers Workshop on Significance held in Vicksburg on October 3 and 4, 1994: Ms. Carroll

Kleinhans, Dr. John Schelberg, Mr. Robert Scott, Dr. Robert Maslowski, Mr. Horace Foxhall, Jr., Dr. Fred Limp, and Mr. Evan Peacock. The suggestions, thoughts, and papers presented by the above-named workshop participants were instrumental in giving direction to the research project and are greatly appreciated. In addition, we are very grateful for the review and comments provided at very short notice by our WES colleagues, Mr. Robert Dunn and Mr. Jim E. Henderson.

The annotated bibliography was prepared under the general supervision at IWR of Mr. Michael R. Krouse, Chief, TARD; Mr. Kyle E. Schilling, Director, IWR; and at EL, of Mr. Roger Hamilton, Chief, RAB; Dr. Robert M. Engler, Chief, Natural Resources Division; and Dr. John W. Keeley, Director, EL.

At the time of preparation of this report, Mr. Kyle E. Schilling was Acting Director, WRSC, and Dr. Robert W. Whalin was Director of WES. Commander of WES was COL Bruce K. Howard, EN.

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# Executive Summary

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This publication offers a broad, analytical review of the literature concerned with the challenging subject of evaluating cultural resource significance. This review of significance includes two main sections: (a) an **Annotated Bibliography** (consisting mostly of peer-reviewed literature) and (b) an **Analysis Section** (devoted to tracing historical trends in archaeological method and theory). The literature summarized here is extensive and is not accessible widely to the archaeological and cultural resource management (CRM) communities. After analyzing a wide range of publications, 21 major themes or concepts were established to characterize the breadth of archaeological views and ideas about significance. A review of each theme was undertaken, including both a discussion and a graphical presentation of trends through time. Systematic indexing and cross-referencing of publications, authors, and significance themes have also been carried out to assist users in locating references of special interest. The concluding section offers some suggestions and insights into the future direction of significance evaluation with respect to the work unit and within CRM generally. Particular emphasis is placed on the opportunities to develop more holistic management strategies, to make greater use of new approaches and technologies, and to use more explicit evaluation methods.

# 1 Introduction

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## Background

This report forms the first in a series of publications sponsored by the U.S. Army Corps of Engineers and dedicated to the task of developing new approaches to cultural resource and archaeological significance. The work contained in this report represents the initial stage of a larger research effort undertaken by archaeologists working at the Waterways Experiment Station. Support for this work unit has been provided by an interdisciplinary research program established by the Department of Defense and known as the EEIRP (*Evaluation of Environmental Investments Research Program*).

The EEIRP is an interdisciplinary research program concerned with both cultural and natural resources. Work units within this program have been designed to respond to environmental objectives and responsibilities that are of primary concern to the Corps of Engineers.

Within this overall research program, cultural resources are considered an integral part of the wider ecosystem requiring responsible environmental stewardship. Consequently, a work unit (*Objective Evaluation of Cultural Resources*) was included in the EEIRP that would develop more efficient, objective, and holistic approaches to the assessment of cultural resources. The principal aims of this research, therefore, are to design methods of evaluation and management that will:

- a. Ensure the wisest use of limited financial resources, and
- b. Make it possible to consider any particular cultural resource (or area) in the broader context of local, regional, and eventually national, populations of sites.

The historical review of archaeological significance and annotated bibliography contained in this first report provide the foundation for a series of forthcoming publications. Field and laboratory research now under way at WES is designed to offer new, pragmatic approaches to evaluating archaeological significance and will form the basis for the next publication. Using these research results in a cumulative fashion, the final product of the work unit will be a manual of procedural guidance

designed to assist managers in grappling with the complexity and challenges of archaeological significance evaluation.

## Objectives for the Literature Review and Analysis

As indicated above, the principal task of the EEIRP research unit was to develop broader, more efficient, and more objective approaches for assessing cultural resources. One of the most important first steps toward these objectives was to review the historical development of ideas about archaeological significance and the methods used to evaluate it. Therefore, the work unit set out to review systematically a selective sample of the archaeological literature on significance for the United States (particularly peer-reviewed publications). The general aims at this initial stage of the work were to:

- a. Identify the range of ideas and approaches that have been proposed by U.S. archaeologists regarding significance, *and*
- b. Determine the general areas of consensus and disagreement concerning how significance should be defined and evaluated.

The first part of our review (*a.*) attempted to outline the basic pattern of ideas that have characterized discussions of significance in the past and present literature. At this stage, particular emphasis was placed on tracing the historical trajectories of major concepts used to define and evaluate cultural resource significance. In the second phase (*b.*), an effort was made to identify critical areas of contrast and similarity, as well as highlight some of the important views and proposals concerning archaeological significance that have received *less* attention. A comprehensive summary of this type was seen as an invaluable stepping stone for the further development of our work—particularly the construction and field-testing of new significance assessment models.

The more specific objectives in undertaking this literary review and interpretive analysis of archaeological significance were to:

- a. Create an annotated bibliography summarizing the major points and recommendations of each reviewed article (*Appendix E*),
- b. Synthesize the principal concepts and ideas addressed by this body of literature as a whole (*Appendix A*),
- c. Interpret some of the major historical patterns and trends concerning significance (*Appendixes A-C*), *and*
- d. Disseminate these initial results to the widest possible audience for general use and critical review.

The last of these objectives was seen as particularly important, since many archaeologists and other professionals with a responsibility for managing cultural resources do not have the time, or the opportunity, to research this subject in depth. Publication of this document, in a hard-copy as well as an electronic form (via the Internet), will ensure that these results reach a large number of practicing archaeologists and resource managers. The use of more efficient, electronic means of publication and communication will not only make it possible to distribute this information more rapidly, but will also provide opportunities for timely feedback from colleagues. By incorporating critical comments and suggestions into an up-dated electronic version of this document, the initial findings can be regularly supplemented, revised and redistributed. Feedback through the Internet will also enhance the quality of this research prior to preparing general guidance manuals at the end of this research project.

It is hoped that the different components of this document (descriptive analysis, graphs, and annotated bibliography) will be beneficial not only for archaeologists, but also to individuals grappling with the question of significance in other, allied disciplines. By highlighting some of the approaches that have been used by archaeologists to address significance, this discussion hopes to raise the visibility of a set of ideas and strategies that could be usefully employed in other contexts. Many of the concepts and recommendations that have evolved in the process of evaluating cultural resources, for example, may provide valuable assistance in managing and evaluating other (natural) resources, and vice versa. Clearly, there is potential here for a two-way flow of ideas and insights concerning significance, involving a cross-fertilization of approaches between cultural and natural resource specialists. Indeed, this type of mutual cooperation will be critical if more holistic management strategies are to move beyond slogans and become operational realities (see Lipe 1974; Dixon 1977).

## 2 Annotated Bibliography

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The body of literature contained in this bibliography is intended to be a descriptive sample of the range of approaches used by U.S. archaeologists to evaluate significance. Although it is by no means exhaustive, it is an attempt to outline the basic evolution of archaeological thinking about significance (i.e., theoretical and methodological approaches) in this country, as well as to define the current state of the art.

Most of the articles have been identified in the peer-review literature since these sources have consistently produced some of the most influential and widely adopted ideas concerning the definition and evaluation of archaeological site significance. A smaller sample of papers, monographs, and reports reviewed in this bibliography have been taken from non-peer review sources (including the so-called *gray* literature). Selection of literature from non-peer reviewed sources was made mainly on the basis that these publications explicitly addressed issues relating to archaeological significance. Therefore, non-peer reviewed publications included in the bibliography should not necessarily be seen as representative of the gray literature as a whole.

The publications reviewed in this bibliography are numerous and often quite difficult to obtain. Most cultural resource managers do not have the time or resources to acquire and read this literature in its entirety. Furthermore, there is currently no easy method of locating literature that deals with *specific* aspects of archaeological significance. One of the main purposes in preparing this bibliography, therefore, is to assist and encourage cultural resource managers in acquiring and using this information. The synthesized format of the annotations and indices which accompany the bibliography will hopefully make it possible to use this literature in either a comprehensive or selective fashion, depending on an individual's particular needs or interests.

To make this body of literature easier to use for reference and research purposes, a standardized format was developed for each annotated publication, along with a variety of indexes. *Appendix E* includes 83 annotated publications arranged in chronological order from the earliest (1972) to the most recent (1994). Readers wishing to locate articles by author (rather than by date of publication), should consult *Appendix D*, which provides an alphabetical listing of all of the authors included in the bibliography. Articles by a specific author can then be located by first

identifying the *Significance Bibliography Number (SBN)* listed beside each author's name in *Appendix D*, and then finding this number in the upper right corner of the corresponding article in *Appendix E* (see the example provided in *Figure 1*).

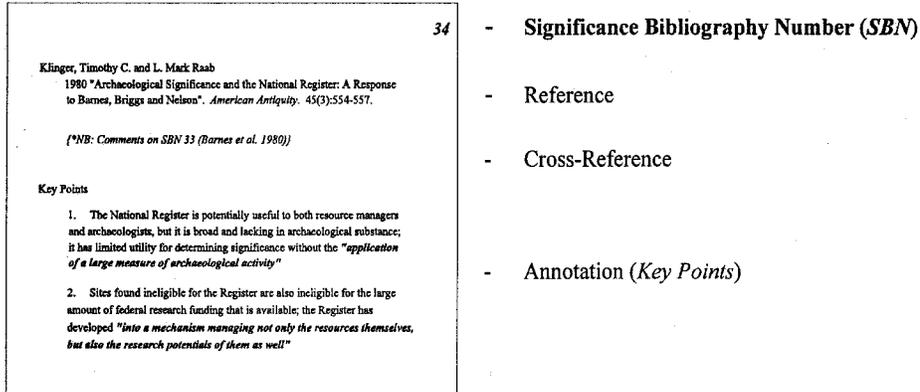


Figure 1: Example of Reference from the Annotated Bibliography with Corresponding SBN

Furthermore, articles that are directly linked or related to one another have been cross-referenced, e.g., papers in *American Antiquity* or *Current Anthropology* that were written in reply to a specific article or set of articles. The reference illustrated in *Figure 1*, for example, indicates that the article by Klinger and Raab (1980) is a response to a previous paper (SBN 33) by Barnes et al. (1980). Likewise the Barnes et al. article points the reader to the discussion by Klinger and Raab (SBN 34).

A hypertext version of this bibliography is now in preparation and will make this conventional form of indexing and cross-referencing obsolete. However, many archaeologists and resource managers do not currently have access to the Internet and continue to rely on hard-copy publications. As a result, we have created several lists and indexes that should make it possible to locate information in the bibliography more easily.

In an effort to present more than a simple annotated bibliography, an attempt was made to use this body of literature in an analytical way to provide insights into the historical development of archaeological significance. The 21 concepts listed in *Appendix A*, and discussed in more detail below, represent a concerted effort to distill the major ideas that have characterized the discussion of archaeological significance over the last 25 years. These concepts were then used as a device for classifying the literature contained in the bibliography. The results of this classification are presented in *Appendix B* in the form of an index or matrix which indicates where readers are likely to find discussions of specific issues relating to significance, such as articles concerned with ethnic significance, archaeological preserves and a range of other themes.

The 21 significance concepts we have identified are arranged on the left margin of this matrix (along the 'y' axis), while a chronological list of authors and publication

dates is provided along the top margin (the 'x' axis) - see *Figure 2*. Those interested in reading all of the discussions dealing with the concept of representativeness, for example, would locate Line 5 in *Appendix B* and would refer to all of those publications that intersected this line and were marked with a black square.

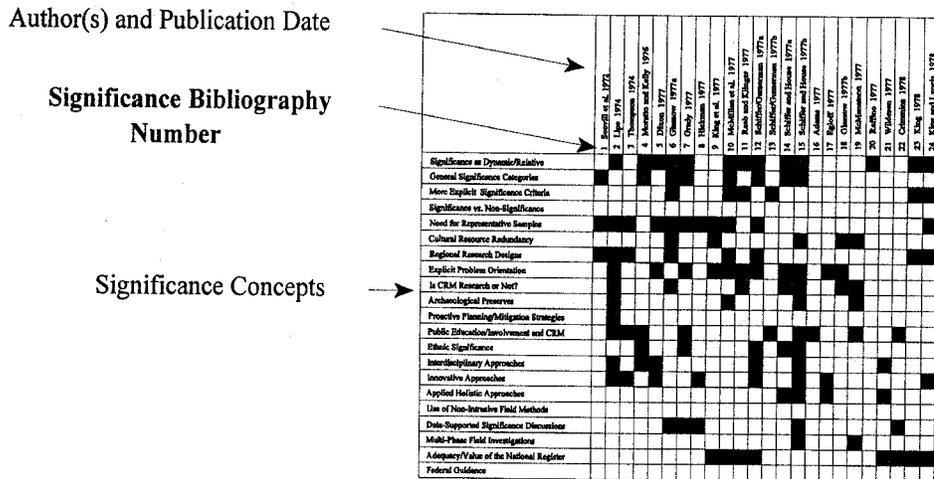


Figure 2: Layout of Significance Matrix in *Appendix B*

For legal and historical reasons, the concept of significance has taken on a specific meaning and importance for U.S. archaeology and archaeologists. Therefore, the initial literature that was reviewed has deliberately emphasized the concept of archaeological significance as it is defined and understood by U.S. archaeologists. Nevertheless, future additions to this bibliography will contain a broader sample of archaeological literature, which will hopefully provide a more expansive, international perspective.

Given the complexity surrounding the concept of archaeological significance, and the enormous volume of literature generated about it, any review of this type (like significance assessments themselves) must be both partial and dynamic. The bibliography presented here is therefore only a preliminary one. Further iterations of this work will aim to incorporate a larger sample of published material from (a) the gray literature, (b) archaeological work outside the United States, and (c) a stratified random sample of significance evaluations within the large ecological units which make up the U.S. Army Corps of Engineers districts. The latter effort is intended to provide some insight into how the concept of archaeological significance is currently understood and implemented by a variety of practicing professionals within the Corps of Engineers.

# 3 Interpretive Analyses

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Our selective review of the literature suggests that archaeological discussions of significance have been devoted primarily to promoting new definitions and ideas. Considerably less attention has been paid to generating pragmatic and explicit evaluation procedures. The overall result of these discussions seems to have been a broader and more comprehensive understanding of the concept of archaeological significance. At the same time, however, there appears to be a pervasive frustration within the archaeological community concerning how to design assessment methods that are both sensitive to new intellectual and technical developments *and* operational in the demanding context of archaeological practice and cultural resource management (CRM).

Before moving on to outline some of the historical trends that we have identified in our literature review, it is worth noting that we encountered relatively few discussions which sought to trace the evolution of the significance concept (however, see Schiffer and Gumerman (eds.) 1977a; Tainter and Lucas 1983; Dunnell 1984). Although the analyses and annotated bibliography which follow were not designed as a definitive historiography of significance, they are, nevertheless, an attempt to synthesize some of the more general patterns of theoretical and methodological development surrounding the idea of archaeological significance.

## General Trends and Observations

Taken together, the annotated bibliography and interpretive analysis which follow emphasize that the significance issue has neither been resolved, nor has it disappeared. Despite the clear peak in published peer-review literature on archaeological significance in the late 1970s (*Figure 3*), this subject continues to be an important, complex, and challenging issue for the discipline. The degree of consensus and convergence concerning the concept of archaeological significance has, however, been limited, leaving the theoretical and methodological *workshops* strewn with an untidy collection of valuable, but often unassembled, pieces. Any coherent assembly of these parts, and any new synthesis of archaeological significance, must take account of the volume and diversity of previously published material on this subject. By failing to adopt a more historical perspective, much of the archaeological literature concerned with significance has made a series of important, but often piecemeal,

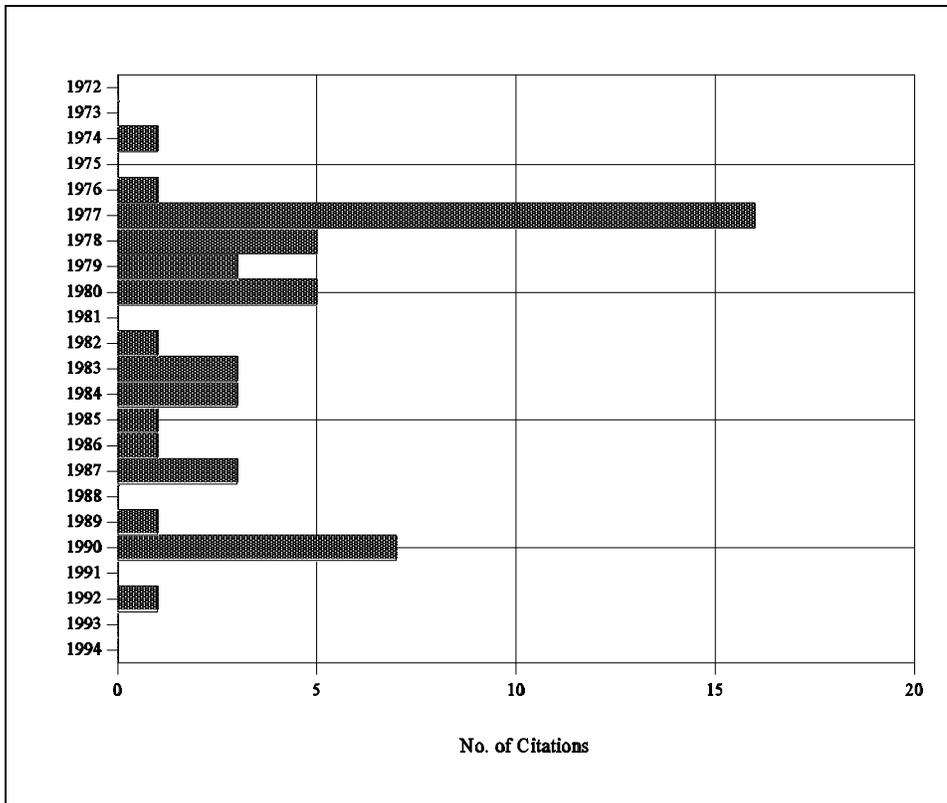


Figure 3: Publication Trends for Archaeological Significance (using only peer-reviewed literature from the bibliography)

contributions that fail to intersect, or acknowledge in any systematic way, the fruitful ideas introduced in earlier publications.

In reviewing the 21 concepts that were used to characterize the significance literature contained in the bibliography, it is clear that there are a number of ideas and issues that have recurred consistently. Others, however, have received considerably less attention. Although all of these concepts have been analyzed individually, and in more historical detail, below, it is worth noting where the general focus of significance discussions has been and *not been* over the last two decades or so (see *Figure 4*).

First, it is useful to identify briefly those significance issues which have received the greatest amount of attention. While there appears to have been a large measure of agreement about the value of certain theoretical positions (e.g., *Significance as Dynamic and Relative*) and methodological approaches (e.g., *Problem-Oriented Research* and *Regional Research Designs*), some of the issues that have been frequently raised in the literature have attracted more controversy (e.g., the *Adequacy and Value of the National Register*). A variety of other ideas have been addressed on a regular basis in the literature, but have generally been discussed in hypothetical or idealized terms, rather than as examples operationalized in the field (e.g., the *Need for Representative Samples*, *Proactive Planning/Mitigation Strategies*,

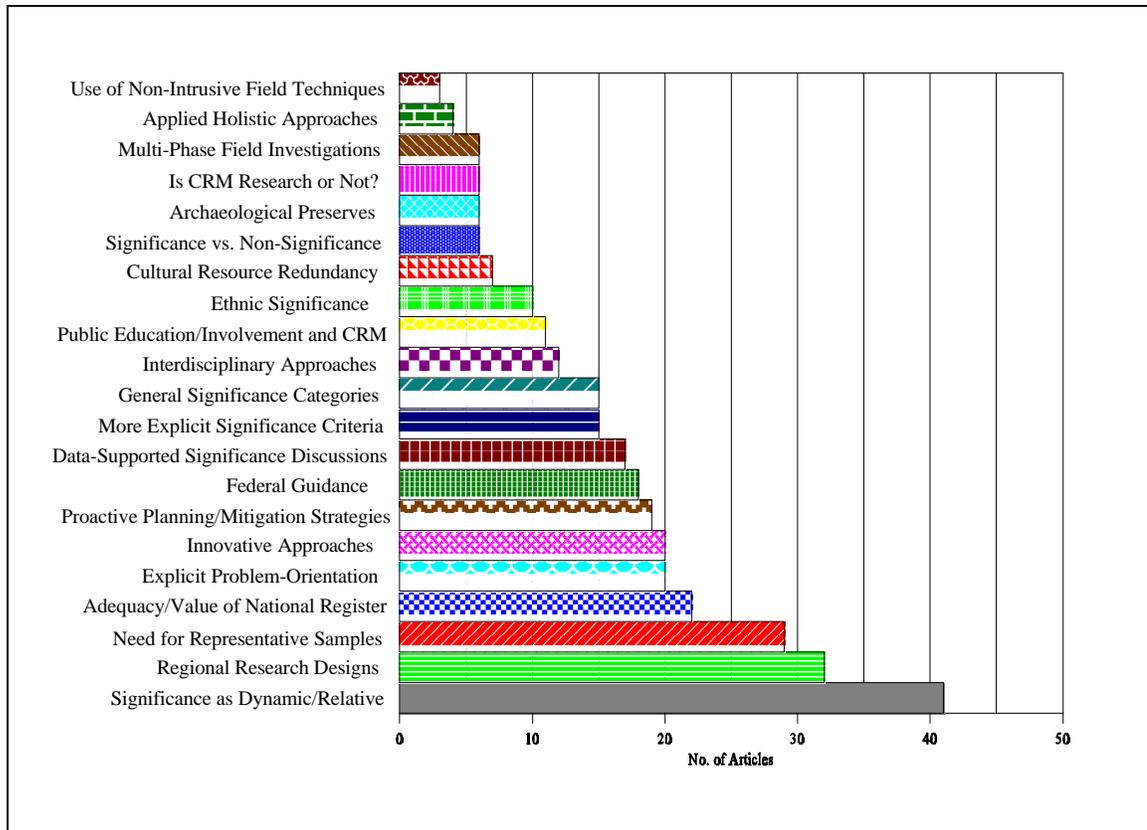


Figure 4. Rank-Order of Significance Concepts (using all of the literature from the annotated bibliography)

*More Explicit Significance Criteria, Innovative Approaches, General Significance Categories and Interdisciplinary Approaches).*

Second, a number of important issues and ideas that surround the concept of significance have been addressed by archaeologists less frequently. It appears that the importance of many of these significance concepts is not necessarily directly related to the small number of citations in the literature (e.g., references to *Ethnic Significance, Cultural Resource Redundancy, Archaeological Preserves, Applied Holistic Approaches, Multi-Phase Field Investigations,* and the *Use of Non-Intrusive Field Techniques* that will be discussed separately below).

To understand the variegated pattern of development represented by these different ideas, however, it is important to look in more detail at the historical evolution of *specific* concepts, as well as their broader, collective relationships with one another through time. In *Figure 5*, for example, it appears that a considerable interest developed in evaluating the significance of historic period resources only *after* the major peak in significance literature (i.e., after 1977). In other words, there appears to be a lag in the significance literature, between an early phase dominated by discussions of how to evaluate prehistoric resources and a later period characterized by an interest in assessing historic sites and in developing Federal guidelines (*Figures 5 and 6*). It is therefore important not to see the later emphasis on either historic resource evaluation or Federal guidance as an isolated phenomena.

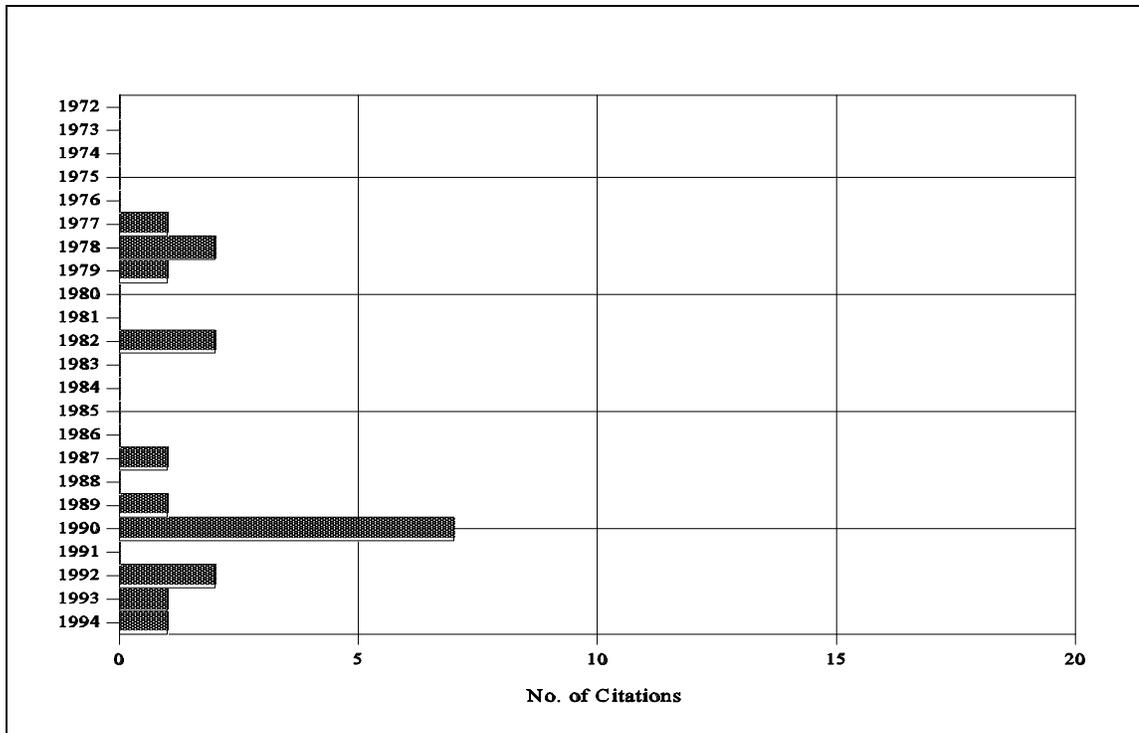


Figure 5. Literature Devoted to Historic Site Significance (using all of the literature in the bibliography)

Although the current sample of publications included in the bibliography remains modest, a number of interesting and suggestive trends that have emerged. Other trends and trajectories may be clearer when additional information has been added and synthesized. In the meantime, this document offers a series of thematic, historical analyses of significance grouped into the following sections:

- a. An analysis of each of the 21 concepts distilled from the literature, *and*,
- b. A broader, comparative synthesis of these concepts in relation to one another.

## Interpretive Analysis of Individual Significance Concepts

The following section provides a brief descriptive analysis of the concepts that were identified as most characteristic of the archaeological literature on significance (refer to *Appendix A* for the summary definitions for each one of these concepts).

Short interpretive summaries are provided for each individual concept, arranged in an order which reflects various groups of related themes. These groupings are

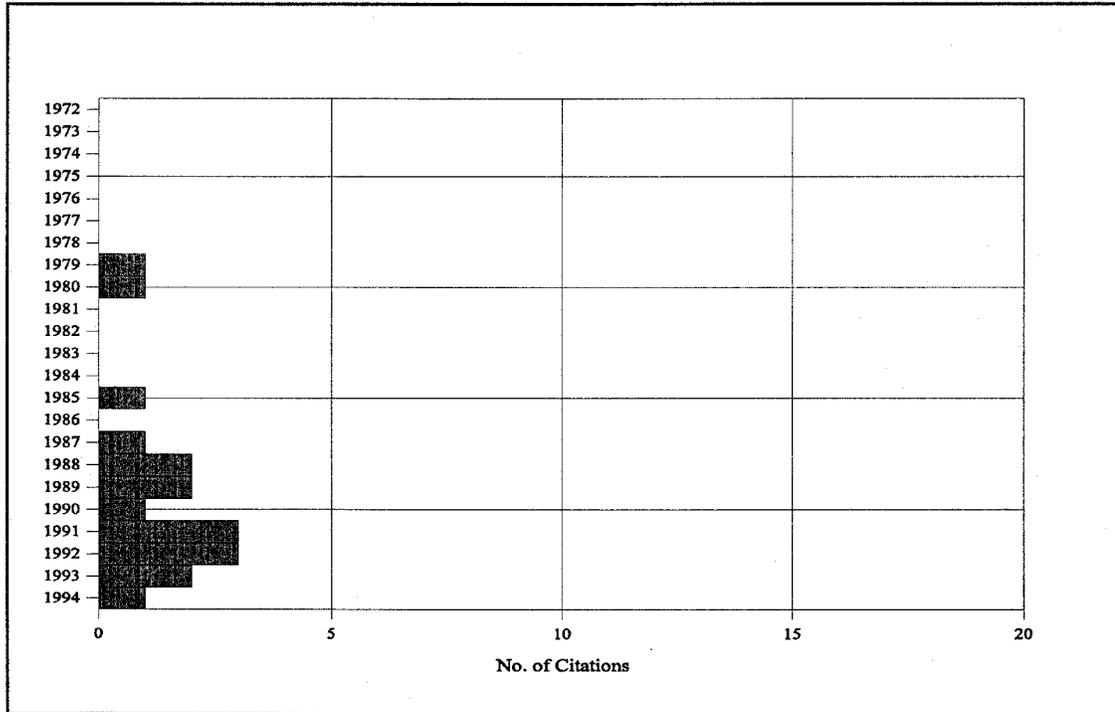


Figure 6. Federal Guidance Literature on Significance Evaluation

identical to those used in the composite histograms provided in *Appendix C.b* and are arranged according to following general themes:

- **Definitional/Evaluation Criteria** (*Appendix C.b1*)
  1. *Significance as Dynamic/Relative*
  2. *General Significance Categories*
  3. *More Explicit Significance Criteria*
  4. *Significance vs. Non-Significance*
  
- **Representativeness and Redundancy** (*Appendix C.b2*)
  5. *Need for Representative Samples*
  6. *Cultural Resource Redundancy*
  
- **CRM Research Designs** (*Appendix C.b3*)
  7. *Regional Research Design*
  8. *Explicit Problem-Oriented*
  9. *Is CRM Research or Not?*

- **Proactive Management Strategies** (*Appendix C.b4*)
  10. *Archaeological Preserves*
  11. *Proactive Planning/Mitigation Strategies*
- **Public Involvement** (*Appendix C.b5*)
  12. *Public Education/Involvement and CRM*
  13. *Ethnic Significance*
- **Use and Development of New Analytical Approaches** (*Appendix C.b6*)
  14. *Interdisciplinary Approaches*
  15. *Innovative Approaches*
  16. *Applied Holistic Evaluations*
- **Field Procedures** (*Appendix C.b7*)
  17. *Use of Non-Intrusive Field Methods*
  18. *Data-Supported Significance Discussions*
  19. *Multi-Phase Field Investigations*

*and*

- **Federal Legislation** (*Appendix C.b8*)
  20. *Adequacy and Value of National Register Criteria*
  21. *Federal Guidance*

### **Definitional/Evaluation Criteria (*Appendix C.b1*)**

**1. Significance as Dynamic/Relative** (*Appendix C.c1*). Of all the issues and ideas that were reviewed in preparing the annotated bibliography, this concept has received the greatest amount of attention and has attracted the highest degree of consensus. Indeed, there has been a consistent emphasis on this point whenever the definition and overall characteristics of archaeological significance were at issue. In general, more recent publications have tended to reiterate or re-emphasize points made in the early literature. In a few cases, however, later discussions have focused on aspects of the significance evaluation process which are relative and dynamic, but which have not been a major focus of previous work. Leone and Potter (1992), for example, have highlighted the subjective nature of significance evaluations and have therefore stressed the importance of public participation in this process. It is also worth noting that none of the literature in the bibliography argued *against* the notion that archaeological significance is a dynamic and relative concept.

**2. General Significance Categories** (*Appendix C.c2*). The use of general categories to describe and define archaeological significance seems to be characteristic of the early literature, with marked peaks in popularity during the latter part of the

1970s and early 1980s. In general, the broad typological categories, introduced by authors such as Scovill et al. (1972), Schiffer and House (1977a), and others, were employed as devices for defining and exploring the concept of archaeological significance in a more systematic and comprehensive fashion (e.g., "substantive," "anthropological," "social scientific," and "technical/methodological/theoretical" significance). The expanded list of significance concepts found in *Appendix A* is, in effect, a modified and up-to-date variation of these ideas—albeit with a different and more specific objective. Following the initial publication and later revision of several prominent significance *typologies*, the enthusiasm for such schemes seems to have waned. Over the last few years, this type of classification has been noticeably absent from the literature concerning archaeological significance.

**3. More Explicit Significance Criteria** (*Appendix C.c3*). Initially, the idea that explicit attributes should be used to evaluate archaeological significance attracted a certain level of debate and discussion. In more recent years, however, treatment of this subject has been more limited and has been restricted largely to the evaluation of historic sites. Although there has been some agreement (in principle) about the value of clearly defined evaluation strategies, there has been considerably more controversy about the choice of appropriate attributes and schemes to assess significance in the field (e.g., compare Plog 1981 with Reed 1987). A number of archaeologists have called for the development and use of more explicit evaluation criteria, but there have been few case studies to illustrate how such methods might work in the field. In some senses, this debate reflects a major methodological impasse in CRM archaeology characterized, on the one hand, by the necessity to use *some* scheme to measure and evaluate significance and, on the other, by a reluctance to define precisely what assessment criteria are, in fact, being used in practice.

A number of the publications reviewed in the bibliography call for the use of more explicit assessment criteria, but do not outline any specific set of parameters for actually carrying out significance evaluations (e.g., Raab and Klinger 1977; King 1978; King and Lyneis 1978). Other publications offer schemes which vary from those that:

- a. Provide general categories with which to evaluate significance (e.g., Glassow 1977; McMillan et al. 1977; Moratto and Kelly 1978) to,
- b. Those that offer more specific, measurable attributes (e.g., Coastal Environments 1979; Reed 1987; Wilson 1990).

Overall, there are very few examples of explicit evaluation schemes in the bibliography that have been field-tested. Furthermore, the majority of these schemes concentrate on evaluation criteria that are based principally, or exclusively, on site-based attributes. As a result, they tend to be largely aspatial and lack any major consideration of archaeological significance at a broader, regional level of analysis. One of the few examples where an explicit set of criteria was used to examine significance at both a site and regional level *simultaneously* is the analysis of historic sites at Fort Hood, Texas (Briuer et al. 1990). Finally, it is worth noting that most of the cases where specific attributes or guidelines are offered as a means of evaluating significance focus on a limited class of archaeological sites, rather than the archaeo-

logical record for the area generally. Examples of this type of specialized focus include mining sites (Hardesty 1990), historic sites (Briuer et al. 1990; Wilson 1990), or sites that have been granted *exceptional* significance in the last 50 years (Sherfy and Luce 1979).

**4. Significance vs. Non-Significance** (*Appendix C.c4*). Discussions of cultural resource evaluation that have emphasized the importance of non-significance have been relatively rare and sporadic in the literature that was reviewed. Nevertheless, the operational definitions of significance and non-significance that have been employed in archaeology underline an important and pragmatic reality—that a differential fate has to be assigned to cultural resources if we are to accept our responsibility for managing them. By avoiding such difficult choices and regarding *all* resources as either important or expendable, we are in danger of adopting a position that is insupportable in legal, ethical, and intellectual terms.

In exploring the dichotomy between significance and non-significance, Tainter and Lucas (1983) have argued that greater attention should be given to defining and evaluating *insignificance*. They suggest that the fate of those resources earmarked to be sacrificed or destroyed will be better served by emphasizing why resources are *not* significant, rather than why they are. Many of the archaeologists that have addressed the notion of non-significance have included in their discussions a clear endorsement of *Concept 1* (*Appendix A*): i.e., the idea of significance as a dynamic and relative phenomenon (e.g., Plog 1981; Tainter and Lucas 1983; Schaafsma 1989; Leone and Potter 1992).

Since the attribution of significance or insignificance for any given set of cultural resources is likely to change through time (e.g., see Lynott 1980), it may be useful to ask whether our basic bipartite division of significance is adequate and accurate. The *yea or nay* division which persists at the moment (i.e., significant versus non-significant sites) essentially presents us with two ill-defined and structurally opposite notions with which to assess the archaeological record. Since CRM work seldom presents us with such stark and absolute contrasts, it may be more useful and prudent to recognize *lesser and greater levels of significance* rather than continue to use the less flexible dichotomy of significant or insignificant. While ultimately this type of semantic device does not resolve the problem of how to select sites for preservation and destruction, it does recognize that:

- a. Significance evaluation involves an assessment of more continuous variation and that,
- b. Evaluation criteria and priorities change through time.

With regard to *b*, it seems more logical, and easier to justify, the regrading of sites from lesser to greater significance than to argue for upgrading a resource previously classified as non-significant to the very different status of a significant site.

## Representativeness and Redundancy (*Appendix C.b2*)

**5. Need for Representative Samples** (*Appendix C.c5*). Of the 21 concepts presented, the third most frequently cited was the importance of representative samples for significance evaluations. In 1977, the year in which the greatest number of articles on significance appeared, two-thirds of the publications addressed (in some fashion) the goal of trying to obtain representative samples of cultural resources. Prior to this time, all of the articles reviewed had discussed some facet of representativeness. This subject continues to be regularly and frequently discussed in the literature. Overall, there is a clear consensus that the goals of research and conservation can be best achieved if a representative sample of cultural resources can be preserved.

Despite any apparent consensus concerning this objective, there appears to be considerable differences of opinion about what is actually meant by establishing representative samples. Discussions of how archaeologists ought to define and establish representative samples, and what possible frames of reference they might use, have attracted widely divergent views. Most of the publications included in our review provide very generalized criteria for establishing representativeness and significance, such as:

- *Chronological Periods*
- *Quantity/Diversity of Cultural Material*
- *Dateable Remains*
- *Presence of Architectural Features*
- *Archival Records (photographic, documentary, oral history)*
- *Site Type*
- *Site Function*
- *Site Size*
- *Physical Integrity*
- *Cultural/Ethnic Affiliations*
- *Historic Themes*
- *Environmental Habitat*
- *Topographic Setting*
- *Severity/Immediacy of Threatened Impact*

It seems ironic that such a critical and highly visible concept is associated with such a dearth of publications seeking to operationalize it. In the literature reviewed very few discussions presented an example of how representative samples might be selected and why particular methodologies were appropriate. If archaeologists are to move closer to the laudable objective of obtaining a representative sample for localized areas, states, and for the country, it seems entirely appropriate to see more peer-reviewed publications addressing this issue.

In a discussion promoting the establishment of archaeological conservation areas (see *Concept 10*), Lipe (1974: 228) suggests that the idea of representativeness should be the guiding principle in evaluating cultural resources and should displace the current concept of significance. He proposes that the maintenance of archaeological preserves would:

*"... at least theoretically permit any type of research to be carried out on the sample that could have been carried out on the original intact population. A sample selected on the bases of current ideas of significance would, on the other hand, be biased, and might exclude some future research and educational possibilities."*

Since the concept of significance is deeply rooted now in both archaeological thinking and federal legislation, it seems unlikely that it will be easily supplanted by the idea of representativeness. There is also some doubt about whether the concept of representativeness provides more operational clarity than significance and whether it constitutes a more efficient and effective tool for evaluating cultural resources. Nevertheless, it is clear that the concept of representativeness can play a major role in helping to define archaeological significance at analytical scales that are more expansive than individual sites (e.g., site clusters, historic contexts and preserves).

**6. Cultural Resource Redundancy** (*Appendix C.c6*). The inverse of ideas about representativeness and representative samples is a concern for cultural resource redundancy. On the one hand, archaeologists face the dilemma of how many Victorian mansions, lithic scatters, or farmsteads are enough. On the other hand is the question of whether the potential scientific and public appreciation value of the archaeological record will suffer in the future due to a lack of sufficient variability. It is curious that only two articles in the bibliography addressed this problem before 1978 (i.e., Glassow 1977; King et al. 1977). Interest in, and attention to, the issues surrounding redundancy appear to have emerged quite late.

The citation patterns represented in *Appendix C.c6* raise a number of provocative questions about the development of the cultural resource redundancy concept. It is worth asking, for example, whether this lag is perhaps due to the fact that redundancy is the more negative side of discussions about representativeness. By focusing on redundancy, rather than representative samples, cultural resource management professionals are forced to come to grips with the larger and more difficult sample of cultural resources, i.e., those sites that are considered *not* significant (see parallel discussion for *Concept 4*). As a consequence of the growth, development, and success of CRM, it is also worth contemplating whether archaeologists have now generated such a large body of information about hundreds of thousands of previously unperceived resources that they are forced to be concerned with the issue of redundancy. Finally, it is important to ask whether the profession has now been forced into a more defensive posture, requiring archaeologists to present more robust and convincing arguments to those who see the mitigation or preservation of redundant resources as an increasing threat to their interests.

The few discussions in our review that have addressed redundancy have focused mainly on the development of professionally responsible research designs. These research designs have been seen as the most important context for defining redundancy (Glassow 1977; Butler 1987). Moreover, professionally responsible research designs have been seen as a means of developing flexible approaches to defining what may be considered redundant resources at a local, regional (state), and national level (King et al. 1977). The recommendation of King et al. (1977) regarding the

development of local, regional, and national contexts for evaluating significance is being adopted as one of the major goals of our EEIRP work unit.

### **CRM Research Designs (Appendix C.b3)**

**7. Regional Research Designs (Appendix C.c7).** The idea of a regional research design and its utility for evaluating archaeological significance is the second most frequently cited concept in the review (*Figure 4*). Not only was it often championed in the early literature, but it continues to be advocated in more recent discussions. This suggests a strong and continuing consensus within the profession for developing well-defined and intellectually rigorous regional frameworks for evaluating cultural resources, rather than restricting our units of analysis to simplistic, site-by-site phenomena or narrow and highly idiosyncratic criteria. The continued and widespread popularity of this concept is probably a function of its relationship and overlap with other frequently cited concepts (i.e., 1, 3, 5, 6, 8, and 10) that have become central to discussions of cultural significance.

**8. Explicit Problem-Orientation (Appendix C.c8).** One of the highly complementary concepts referred to above is the promotion of explicit problem-oriented research in CRM. Publications arguing for the use of clearly defined research orientations display a peak in the late 1970s (Appendix C.c6), but continue with a lower frequency thereafter. This pattern of a pronounced peak (i.e., 1977) and marked trough (after 1981) is consistent with several related concepts listed in *Appendix A* (i.e., 2, 3, 7, 16, and 17). Collectively, the developmental patterns of these different concepts suggest that they are all related to the burst of interest in method and theory characteristic of the 'New Archaeology' of the late 1960s. Once these ideas had made their way into the early literature on significance, they were less frequently cited. The extent to which explicit, problem-oriented research has been carried out in the context of significance evaluation strategies is a question that will be addressed in the next phase of this research (i.e., by way of a survey of the gray literature from a stratified random sample of Corps of Engineers projects).

At the heart of discussions about explicit problem-orientations is the argument that significance evaluations must be undertaken in the context of intellectually challenging research. This type of research is defined by approaches that solve current research problems and create new knowledge. One of the best expressions of this type of idea is the notion of a "*tension zone*" introduced by Schiffer and House (1977a). In their view, the commitment to do quality research when grappling with significance involves placing oneself in a *tension zone* (between current practice and new, innovative approaches), where dedicated effort and a willingness to take risks are required. According to Plog (1974: 19): "*The courage to risk being wrong is the essence of innovation.*" In this context, one interesting question begs an answer. How much disparity actually exists between:

- a. The promotion of innovative research and strategies to collect new knowledge (i.e., discussions of theory and method), *and*
- b. The day-to-day practice of significance evaluation?

Although there is considerable agreement in the literature concerning the use of problem-oriented research designs as the best approach to evaluating significance, it would be a mistake to take too much comfort in this apparent consensus. Problem-oriented approaches are notoriously variable and eclectic, for example, and do not necessarily help to address many of the unanticipated and future questions faced by archaeologists. Even the best executable problem-oriented research design can deal only with a finite set of research questions. Inevitably, such efforts will fall short of the ideal goal of collecting a comprehensive set of information appropriate for addressing all potential research questions. Explicit problem-oriented research designs are therefore a necessary prerequisite for designing a well-constructed significance evaluation strategy, but by themselves are inadequate. A consideration of other issues and concepts (e.g., *Appendix A*) is also required to enhance the value and flexibility of problem-oriented approaches.

One important example of how problem-oriented research can be augmented and improved is the recommendation that archaeologists move away from the *lone wolf* and elitist tradition of scholarship by developing research designs that incorporate elements such as:

- a. A commitment to research at a regional level (Moratto and Kelly 1978; Schiffer and Gumerman 1977b).
- b. Greater public participation (Lipe 1974; Leone and Potter 1992).
- c. More interdisciplinary collaboration (Dixon 1977) *and*,
- d. A greater degree of intradisciplinary cooperation (Schiffer and House 1977a; Tainter 1987).

Close cooperation between groups of archaeologists, as well as non-archaeologists and the general public, is particularly important in evaluating significance and helps to justify tax-supported CRM activity in terms of its broadest scientific and social value. Finally, several authors have discussed the inherent and fundamental differences between the goals of research and conservation (Dunnell 1984; Lipe 1984), further suggesting that a problem-oriented research commitment alone does not constitute a sufficient basis for responsible significance evaluation.

**9. Is CRM Research or Not?** (*Appendix C.c9*). Judging by the literature reviewed, debate and discussion of this issue appears to have been fairly limited. Interest in the question of whether CRM is, or should be, synonymous with research is marked by a peak in 1977 and followed by a general hiatus. It appears that following the passage of federal preservation legislation in the late 1960s and early 1970s, and subsequent discussions in the literature (relating to both significance *and* CRM generally), archaeologists rapidly reached a consensus concerning the value of research in cultural resource management. Indeed, with one notable exception (i.e., Dunnell 1984), none of the publications included in the bibliography take the position that CRM is not research.

Dunnell's dissenting position on this issue is based on the view that CRM is not problem-oriented research and is in fact a biased approach with the potential to run counter to the goal of long-term conservation (particularly if representative samples are not preserved for future research and public appreciation). The argument offered by Dunnell (1984: 68) seems to equate research with site destruction and sees conservation and research as antonyms: "*To a greater, or lesser extent, almost all archaeological research consumes the archaeological record by virtue of the techniques of data acquisition.*" Leaving aside the veracity of this statement in light of the increasingly greater use of non-destructive investigation methods (see discussion of *Concept 17*), many archaeologists would argue that it is critical to use the results of problem-oriented research as a means of formally establishing representative samples, conservation areas, and responsible management strategies.

### **Proactive Management Strategies (Appendix C.b4)**

**10. Archaeological Preserves (Appendix C.c10).** Although the concept of archaeological preserves has received limited and sporadic discussion in the literature, it remains one of the most important and compelling goals of cultural resource management. This idea, and the conservation ethic which is embedded in it, are particularly important for the conduct of CRM and research by federal archaeologists because of the large tracts of public land managed by different government agencies.

Lipe (1974: 226-227), who originally introduced the concept of archaeological preserves, defined them as "*areas where land-alteration is prohibited or at least very rigidly controlled.*" In his view, the establishment of archaeological conservation areas should be carried out with both archaeological and nonarchaeological criteria in mind, in order to attract individuals and organizations with an allied interest in preservation. Lipe also suggests that the creation of preserves should be guided by the principle of *representativeness*, rather than significance (see discussion of *Concept 5*).

Whether or not one accepts the primacy of representativeness over significance, it is clear that Lipe's emphasis on conservation and archaeological preserves has had a lasting impact on the theory and practice of cultural resource management. However, far more attention has been paid to the former than to the latter. No clear operational examples of archaeological preserves *and* the criteria for establishing them were offered in the literature reviewed. If we are to maintain the concept of significance, and adapt it to incorporate more successfully the idea of archaeological preserves and developments such as off-site/non-site archaeology (Foley 1981a, b; Ebert 1992; Rhoads 1992), then perhaps we should shift our emphasis from exclusively site-based evaluations of significance to a greater consideration of significance at a regional scale.

**11. Proactive Planning/Mitigation Strategies (Appendix C.c11).** The importance of this concept for effective and responsible resource management has been recognized repeatedly, particularly in the earlier literature. These discussions underline the fact that the planning process, like the concept of significance, is a dynamic and continuous process (Green 1983: 2). Clearly, an understanding and assessment

of significance is closely related to the evaluation of impact processes. Therefore, to achieve any systematic and detailed understanding of the processes that have affected, or are likely to affect, the integrity of cultural resources, it is apparent that some research commitment is required. However, as Schiffer and Gumerman (1977c: 291) have indicated:

***"The greatest obstacle to the forecasting of impacts, beyond the conservation archaeologist's indifference to the problem, is the impoverished state of knowledge about the effects of various activities and processes on archaeological resources."***

A better understanding of impact processes, particularly in terms of predicting their deleterious effect on cultural resources is, in our view, neither a self-evident exercise nor something that can be readily provided to cultural resource managers by project planners or engineers. Formally asking and answering questions about impact processes can be no less demanding a research endeavor than traditional anthropological research associated with CRM projects. There is a wide variety of archaeological contexts in which an analysis of impacts would be particularly important, for example:

- a. Assessment of the destructive effects of stream bank erosion (associated with the raising and lowering of reservoir water levels) *and*,
- b. An understanding and prediction of the impact of military maneuver training and recreational vehicle traffic on cultural resources.

These appear to be fertile areas for applied research, where the results can become the basis for better informed and more responsible management recommendations.

Only a limited number of case studies illustrate the use of proactive planning and mitigation strategies as an aid to evaluating significance. Even fewer publications offer practical advice about how to anticipate and forecast impacts. Some of the principal strategies for proactive planning suggested in the literature include:

- a. Greater involvement in the planning process (Lipe 1974; Green 1983)
- b. Expanding study areas beyond the immediate zone of impact (Schiffer and Gumerman 1977c)
- c. Utilizing the insights of local residents, amateur archaeologists and planning agencies (Green 1983) *and*,
- d. Developing robust predictive models (Schiffer and Gumerman 1977c).

If evaluations of archaeological significance are to be more proactive, and less *reactive*, the implementation of new strategies will be critical. More widespread use of analytical tools such as geographic information systems should help to increase the quality and efficiency of predictive modeling, for example, as well as other attempts at forward planning. By embracing these new techniques and approaches,

archaeologists are more likely to avoid the *crisis and surprise* style of management that often characterizes the current practice of CRM.

## **Public Involvement (Appendix C.b5)**

**12. Public Education/ Involvement and CRM (Appendix C.c12).** A cluster of articles in the mid- to late-1970s highlight a period in which the profession took a particular interest in educating and involving the public in archaeology. The publication of *Public Archaeology* by Charles McGimsey (1972) and, later, Lipe's (1974) discussion of conservation strategies had a significant role to play in this regard, and helped to heighten awareness within archaeology about the importance of public involvement and support. It is perhaps no coincidence that the principal concentration of articles occurred at a time when:

- a. Environmental, preservation and conservation issues were seen as national priorities *and*,
- b. A number of major federal laws were passed affecting the treatment of cultural resources.

This national mandate seems to have created a powerful public constituency, so that archaeologists found themselves obliged to represent not only their own professional and scientific interests, but also the broadly based views and concerns of the general public.

Once a number of ideas had been voiced in the literature, and subsequently adopted in federal CRM policies and guidance documents, the enthusiasm for discussing this issue declined considerably. In the years following 1978, therefore, the number of publications devoted to public participation and the significance process also decreased significantly.

More recent discussions of public involvement in archaeology, particularly the essay by Leone and Potter (1992), have reminded archaeologists not to lose touch with public perceptions and values. These arguments suggest that public support is not only essential to maintain CRM, but that it is crucial to ensure that our evaluations of significance are genuinely pluralistic and democratic, rather than narrow and elitist.

**13. Ethnic Significance (Appendix C.c13).** Publications in the bibliography that emphasized the consideration and importance of ethnic significance peaked in the late 1970s and have been sparse since that time. The growth of this issue in archaeology is not an isolated phenomenon and appears to be related to a series of larger scale international developments that have helped to awaken, or reawaken, public interest in ethnicity (e.g., the civil rights, anti-war and anti-apartheid movements and, more recently, the ending of the Cold War).

Initially, it appears that the archaeological community in the United States focused its attention predominantly on the scientific value of cultural resources.

Increasingly, however, it became clear that scientific values provided an insufficient basis for evaluating and preserving cultural resources. As archaeologists began to take a more active interest in public education and participation, the concept of a social or public value for cultural resources was extended to include a consideration of ethnicity and Native American concerns. It is worth noting that a number of archaeologists (e.g., Lipe 1974) recognized the importance of ethnic significance at an early stage and were involved in consultations with native communities prior to the passage of Federal laws requiring such activity.

In more recent years, in the United States particularly, archaeologists have begun to realize that significance evaluations need to incorporate the views and values of native communities if the archaeological record is to be managed and interpreted in a responsible fashion. Despite the small number of publications devoted to this subject, a few case studies in the bibliography illustrate how ethnic significance can be measured and evaluated (see Doyel 1982; Cleeland and Doyel 1982). The passage of Federal legislation relating to Native Americans (i.e., the *American Indian Religious Freedom Act* of 1978 and the *Native American Graves Protection and Repatriation Act* of 1990) and the publication of *Guidelines for Evaluating and Documenting Traditional Cultural Properties* (Parker and King 1990) has further emphasized the importance of ethnic significance in both legal and ethical terms.

## **Use and Development of New Analytical Approaches (Appendix C.b6)**

**14. Interdisciplinary Approaches (Appendix C.c14).** The concern expressed in this literature for adopting interdisciplinary approaches to significance evaluation displays an historical pattern very similar to several other concepts outlined in this section (i.e., a small, early cluster of articles, followed by little further discussion after 1984). This pattern suggests that interdisciplinary cooperation is clearly preferred to the alternative, which demands that archaeologists be 'jack of all trades', but master of none. Put simply, no one archaeologist is able to command the expertise, knowledge, and resources needed to confront the types of interesting and useful research questions that can be addressed by an interdisciplinary team of experts. As a consequence of such collaborative research efforts, it is clear that the information value and research potential of cultural resources is considerably enhanced.

A corollary consideration is that a particular cultural resource may be significant, or even critical, to other disciplines (see Dixon 1977), as well as having various interests for the public, above and beyond archaeology. Furthermore, this suggests that the broader the basis of significance determinations, the more defensible and reliable they are likely to be. Finally, it is notable that quite early in the significance literature, Egloff (1977) pointed out that the burden and expense of historic preservation is more effectively distributed when several disciplines are seen to benefit. The advantages of such networking can also help to promote the more efficient use of scarce and expensive resources, such as sophisticated photographic, mapping, and computer technologies.

**15. Innovative Approaches (Appendix C.c15).** Unlike the bimodal pattern displayed by many of the themes, articles emphasizing the need for new theories,

methods, and techniques are more numerous *after* the year 1983 than before. The ongoing search for innovative alternatives to traditional significance evaluations may reflect a concern that CRM is too often perceived of as offering 'cookbook' procedures for conducting surveys, inventories, evaluations, mitigation, protection, and preservation in a lock-step fashion. Because of the complexity and variety of cultural resources represented in the archaeological record, rigid, universally applicable approaches to significance evaluation are clearly impractical. Flexibility is essential in designing any workable assessment strategy (Lipe 1974). It is questionable, for example, whether significance evaluations should *always* precede on a site-by-site basis before regional inventories and databases are developed. The combined use of geographic information systems and exploratory data analysis (EDA) provides an alternative to conventional piecemeal evaluation of individual sites by classifying and analyzing sites with the aid of a large regional database (Williams et al. 1989).

What is significant is not legislated in precise terms (Moratto and Kelly 1978). Much of the concern expressed in the literature focuses on the resourceful application of the latest theories, methods and techniques within the constraints of time and funding (Lipe 1984). According to Butler (1987), what determines significance is the body of theoretical and substantive knowledge developed within the discipline, rather than cookbook approaches.

Some concern has also been expressed about the adoption of inflexible state plans that discourage innovative significance evaluation strategies (i.e., Noble 1987; Tainter 1987). In addition to the reservations expressed about rigid state plans, Green (1983) suggests that it is important to develop multiple plans and multiple resource management strategies. Green's recommendation to develop different, variegated management strategies is a rare example from the literature arguing for the development of innovative plans involving a more holistic, or ecosystem, approach to managing cultural and natural resources.

**16. Applied Holistic Evaluations** (*Appendix C.c16*). In the literature reviewed, very little discussion of this idea has taken place. In 1990, however, four separate case studies were published that explicitly developed broader contexts for formally evaluating significance. All of these studies were based on an evaluation of historic period sites, and all used approaches, data, or criteria derived from both archaeological and nonarchaeological sources. These discussions attempt to move beyond a simple concept of *representativeness* by employing an expanded set of tools and ideas for evaluating significance.

McManamon (1990), for example, evaluated a group of historic sites from the outer Cape Cod region of Massachusetts by formally analyzing patterning in a stratified random sample survey. Probability statements about the frequency, rarity, and redundancy of sites were used as the basis for establishing representative site types. The study undertaken by Smith (1990) departs from traditional site-by-site assessment strategies and opts instead for the county as the primary unit for analysis. The importance of individual historic sites is assessed by viewing them within the context of a population of communities. In Smith's analysis, the county becomes the context for better understanding historic site variability. In a similar way, Hardesty (1990) evaluates mining sites not as discrete entities, but as elements of a larger

system (i.e., the mining district), to determine better what is representative and redundant. Finally, Briuer et al. (1990) use GIS and EDA techniques to analyze a large, complex inventory of over 1000 historic period sites in central Texas. The object of this study was to define a representative sample of sites using a wide variety of archaeological and non-archaeological variables.

## **Field Procedures (Appendix C.b7)**

**17. Use of Non-Intrusive Field Methods (Appendix C.c17).** Despite the demonstrable importance of non-intrusive or non-destructive methods of investigating and evaluating significance, this idea is the least frequently cited in our bibliography. Only three articles reviewed addressed this subject directly (i.e., Dunnell 1984; Lipe 1984; Briuer et al. 1990). Examples of the use of non-intrusive techniques for evaluating significance in the field are even less common.

As Briuer et al. (1990: 61) have emphasized: *"The potential exists for finding responsible ways to reduce unnecessarily expensive and destructive cultural resource management practices."* Equally, Dunnell (1984: 73) has suggested that:

*"The effectiveness of CRM is clearly tied to data collection strategies. In no other area would technical innovation be more profitable than in the development of low-cost, high coverage technologies. Remote sensing and photogrammetry are just beginning to make important contributions in archaeology; they are the means by which most of the scientific world measures."*

The irony is, however, that while there has been widespread interest in non-destructive technologies and approaches within the profession (such as aerial photography, geophysical prospection, aerial and satellite-borne remote sensing, and geographical information systems), this bibliography suggests that archaeologists have yet to implement many of these techniques for evaluating significance.

If the conservation ethic, so eloquently promoted by Lipe (1974) and Dunnell (1984), is to be put into practice, it is clear that non-destructive techniques will need to become a more regular feature of significance evaluation procedures and of CRM generally. In a series of recommendations arising from a class discussion of ethics and anthropology at the University of South Carolina, Johnson et al. (1995) have stated:

*"We think that ethical archaeological practice needs to emphasize both conservation and preservation. Activities amenable to both preservation of the archaeological record and continued research include the use of nondestructive/nonintrusive site exploration. Although there has been some research on the utility of such methods, there should be greater emphasis on the development and implementation of remote-sensing methods, as well as greater attention to surface remains."*

A similar level of enthusiasm for these approaches was expressed by the chairs of university anthropology departments in a nationwide questionnaire designed to evaluate the future direction of archaeology (Givens 1994: 4).

In recent years, the sophistication and analytical flexibility of many non-destructive tools have improved considerably (e.g., Clark 1990; Scollar et al. 1990; Lock and Stančić (eds.) 1995; Aldenderfer and Maschner (eds.) 1996). The development of these new tools and approaches has made it possible to gather a great deal of information from the archaeological record with little or no damage to our resource base. The added advantage of employing non-destructive techniques (such as aerial photography, remote sensing, geophysics, and GIS) is that they are often capable of providing a larger-scale (macro) perspective, complementary to the more intrusive and spatially restricted methods traditionally employed in CRM, such as coring, shovel-testing, and excavation. The macro or regional perspective offered by these approaches is particularly important in helping to evaluate significance and representativeness at different, broader scales of analysis. By applying non-destructive methods in a more consistent and innovative fashion, archaeologists will ensure that we are able to meet two of our primary objectives in CRM (i.e., research and conservation) without many of the ethical contradictions highlighted by Dunnell (1984).

**18. Data-Supported Significance Discussions** (*Appendix C.c18*). A considerable number of the publications in the bibliography were devoted to discussion of the data used in formulating significance evaluation strategies. The detail contained in these discussions varies substantially, however, from passing references to site types and assessment criteria to in-depth descriptions of analyses. Thorough explanations of evaluation procedures and significance criteria are rare.

In general, the data-based treatments of significance contained in our bibliography exhibit two principal peaks:

- a. One in the late 1970s and early 1980s (which mirrors the general peak in significance publications at the same time) *and*,
- b. Another in the late 1980s and early 1990s.

While the focus of articles associated with the first peak is characterized by a range of different thematic foci (i.e., historic, prehistoric, and ethnically significant sites), the later peak is dominated almost exclusively by discussions of historic period sites.

It is difficult to know, with this current sample of literature (consisting largely of peer-reviewed publications), whether the limited number of detailed descriptions of significance approaches is characteristic of the CRM literature generally. The vast gray literature on this subject may have a very different orientation. To evaluate this possibility in more detail, a later phase of our work is devoted to the analysis of a stratified random sample of gray literature from recent Corps of Engineers projects.

**19. Multi-Phase Field Investigations** (*Appendix C.c19*). A small number of articles over the years have addressed various aspects of the recommendation to

evaluate significance in a series of steps or phases. These discussions outline strategies for designing and implementing field and analytical projects that overlap and provide feedback at each stage. In this view, cultural resource management is seen as an iterative process, and not discrete compliance events. Examples in the literature range from the Cache River project in Arkansas (Schiffer and House 1977b) to multi-phase surveys and database development at Fort Hood in Texas (Williams et al. 1989; Briuer et al. 1990). A continuation of multi-phase investigations exploiting geomorphological and extensive subsurface sampling is described by Trierweiler (1994). More general discussion of the problems associated with multi-phase approaches is found in Butler (1987) and McManamon (1977).

## **Federal Legislation (*Appendix C.b8*)**

### **20. Adequacy and Value of National Register Criteria (*Appendix C.c20*).**

The issue that has attracted the fourth greatest number of citations in the bibliography is concerned with the adequacy of National Register criteria for evaluating archaeological significance.

Between 1977 and 1985, discussions focused mainly on the dissatisfaction with the National Register criteria and their assumption that cultural resources exhibit some form of logical, inherent quality that allows their significance to be evaluated. This notion did not sit well with many archaeologists who pointed out the subjective and dynamic nature of both research designs and individual perceptions of research potential (Raab and Klinger 1977; Tainter and Lucas 1983; King 1985; Perry n.d.). On the other side of the issue were those who argued for the adequacy of National Register criteria and promoted their use (Sharrock and Grayson 1979; Barnes et al. 1980; Wendorf (ed.) 1980; LeBlanc 1983). More recently, new life has been injected into what appeared to be a moribund issue by considering more theoretical and philosophical issues to do with the definition of significance and bases for evaluating it (e.g., Tainter and Lucas 1983; Leone and Potter 1992).

**21. Federal Guidance (*Appendix C.c21*).** A considerable body of published literature deals with Federal policy in the form of Department of the Interior and National Advisory Council on Historic Preservation guidance documents and bulletins. These publications discuss a wide variety of topics related to significance evaluation. Ninety percent of what has been published on this subject appears after 1985 and, overall, accounts for much of what is contained in the bibliography since that date. *Figure 7* lists the type of Federal guidance and the subject matter of each citation. The *SBN* provided in *Figure 7* allows the reader to locate each citation and the different themes it covers by reference to *Appendix B*. Likewise, the *SBN* makes it possible to locate the individual, annotated summaries for each publication listed in the bibliography (i.e., in *Appendix E*).

<b>Type Of Document</b>	<b>Title</b>	<b>SBN</b>
National Register Bulletin	<i>Definition of National Register Boundaries for Archeological Properties</i>	<b>51</b>
	<i>How to Apply the National Register Criteria for Evaluation</i>	<b>74</b>
	<i>How to Complete the National Register Registration Form</i>	<b>73</b>
	<i>How to Complete the National Register Multiple Property Documentation Form</i>	<b>72</b>
	<i>Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places</i>	<b>75</b>
	<i>How to Establish Boundaries for National Register Properties</i>	<b>54</b>
	<i>Guidelines for Local Surveys: A Basis for Preservation Planning</i>	<b>49</b>
	<i>Guidelines for Restricting Information About Historic and Prehistoric Resources</i>	<b>60</b>
	<i>Guidelines for Evaluating and Documenting Rural Historic Landscapes</i>	<b>61</b>
	<i>Guidelines for Evaluating and Documenting Historic Aids to Navigation</i>	<b>76</b>
	<i>Guidelines for Evaluating and Registering Historical Archeological Sites and Districts</i>	<b>80</b>
	<i>Guidelines for Evaluating and Documenting Traditional Cultural Properties</i>	<b>67</b>
	<i>How to Evaluate and Nominate Potential National Register Properties That Have Achieved Significance Within the Last 50 Years</i>	<b>31</b>
Archeological Assistance Program Technical Briefs	<i>Archeology in the Historic Landmarks Program</i>	<b>59</b>
	<i>The National Historic Landmarks Program Theme Study and Preservation Planning</i>	<b>77</b>
National Advisory Council on Historic Preservation	<i>Identification of Historic Properties: A Decision Making Guide for Managers</i>	<b>58</b>
	<i>Historic Resource Management Plans (Draft)</i>	<b>79</b>

Figure 7. Index of Federal Guidance Literature (*National Park Service/National Advisory Council on Historic Preservation*)

## 4 Opportunities and New Directions

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Having described the contents of the annotated bibliography and having completed the analysis of a body of literature spanning nearly a quarter of a century of archaeological thought and discussion, it is appropriate to address a number of salient issues that appear to be important in developing new methods for evaluating archaeological significance.

### Holistic Management Strategies for Stewardship

Since the advent of the *National Historic Preservation Act*, discussions concerned with the evaluation of cultural resources have displayed a *general* trend characterized by a series of thematic transitions. In approximate chronological order, the emphases of these significance discussions have varied from:

- a. An early and heavy concentration on contemporary archaeological research *to*,
- b. Future archaeological research values *to*,
- c. The importance of cultural resources to other (allied) disciplines *to*,
- d. The value of cultural resources to all disciplines *and finally to*,
- e. Consideration of broader public and social values.

An increased awareness of the significance of cultural resources, beyond their scientific value, typifies the later literature. These later publications are characterized by the incorporation of an increasingly wide variety of public, social, and ethnic values which take their place alongside the importance of scientific research. In keeping with this 'snow-balling' trend and the gradual recognition of the more holistic value of cultural resources, we believe that there are opportunities for viewing the significance of archaeological resources in equally broad and expansive terms. Since cultural resources represent an integral component in a functioning ecosystem

or landscape, they deserve to be seen and evaluated within this larger frame of reference. Clearly, from this perspective, an essential prerequisite for any responsible resource management strategy will be a better understanding of the importance of both cultural and non-cultural processes.

To move from a discussion of useful concepts and ideas concerning significance to their creative application in the field, it will be important to look beyond our immediate interests and expertise as archaeologists. Rather than concentrating exclusively on compliance and Federal laws, archaeologists engaged in CRM have the opportunity to embrace a larger and more critical concept for evaluating, protecting, and preserving cultural resources: i.e., *stewardship*.

The idea of stewardship implies more than significance, CRM, or archaeology, and includes a broader set of responsibilities for managing resources. Using a holistic ecosystem or landscape approach, neither cultural nor ecological resources can be evaluated without a detailed consideration of the other. More conventional management strategies, however, tend to dichotomize resources into mutually exclusive categories (i.e., cultural versus natural) so that the complex interrelationships between them are seldom analyzed. This type of selective and piecemeal consideration of our cultural and ecological heritage has major consequences for the quality and representativeness of the resources we elect to preserve.

Stewardship of the environment requires more holistic ecosystem management strategies that consider the cumulative significance of all resources. Use of this concept offers several important opportunities. A better understanding of significant impact processes through applied research, for example, has direct benefits for more informed management of the whole environment, not simply the cultural components within it. The adoption of multiple resource management strategies for preserves and *set-aside* areas will also clearly result in greater public and research benefits and a greater return on investments. One of the best examples of such a strategy is the dual benefit of considering threatened and endangered species protection as an additional factor when establishing a conservation *set-aside* area. In this context, we believe it is especially important to place the management of cultural resources in a broader frame of reference which embraces not only archaeology and its constituency, but also a variety of other professional and public interest groups whose views affect *resource policy and conservation* in a more comprehensive sense.

Opportunities that are not so obvious, however, include the advantages of networking. Cooperation with other resource management programs and individuals has a variety of important benefits, including more efficient sharing and access to critical information, expertise, emerging technologies, and new methodologies. Networking is particularly crucial in many contemporary contexts where the research and resources required for these types of endeavors are often scarce and expensive, particularly if those involved in cultural resource management continue to operate in relative isolation. By establishing cooperative links between the individuals, groups, and institutions involved in similar, interdisciplinary management efforts, the value of investments is likely to be enhanced significantly.

Competition for the necessary assets to conduct innovative significance evaluations is only likely to increase in the foreseeable future, particularly in light of the spiraling cost of research and the difficulty of achieving ambitious preservation/conservation objectives. These trends are especially relevant in view of the current fiscal policies being adopted at the state and Federal levels. At such times, it makes little sense for cultural resource management to 'go it alone'. Research that results in new information and exploits innovative approaches and technologies will stand a better chance of funding if Federal agencies proceed to develop partnerships with universities, with the private sector, and amongst themselves. In this way, all of the parties involved in cultural resources management will capitalize on their collective strengths and resources.

## Resourceful Use of New Analytical Tools and Approaches

In an attempt to characterize the challenges faced by archaeologists trying to evaluate cultural resources, Dunnell (1984: 62) has defined the problem succinctly:

*"No concept in cultural resource management has proved more vexing than that of the significance (in a legal and regulatory sense) of archaeological resources. In each instance of significance assessment, the archaeologist is caught in a moral dilemma. On the one hand, there is the certain knowledge that not all resources can be saved. On the other is the recognition that evaluations of significance could determine whether specific sites will be destroyed and, thereby, the nature of the archaeological record for future generations."*

One way to address the issues raised by Dunnell (and a variety of others who have struggled to define and explore the concept of significance) is to step back and ask whether archaeologists and resource managers are currently making the best use of the analytical tools and methods currently at their disposal. Many discussions and arguments reviewed in this bibliography implicitly regard current archaeological method and theory as *best practice*, without a more detailed or critical analysis of approaches actually used to evaluate significance. Amongst archaeologists there is some general agreement about assessment strategies, emphasizing the use of concepts such as regional perspectives, problem-oriented research and the need for representative samples. However, some stones remain unturned and many dilemmas continue to be more easily raised than addressed.

There is widespread agreement, for example, that significance is highly context-dependent and very dynamic, being subject to marked changes through time. While this is clear to many practicing archaeologists and resource managers, there has been a general reluctance to translate these ideas into operational procedures that can be applied in the field. It appears that part of what has been missing thus far in CRM is a set of attitudes, theoretical frameworks, and pragmatic strategies that is congruent with the changeable and dynamic nature of significance.

Other major opportunities for understanding and exploring significance in this way are already available in the form of GIS, predictive modeling, and simulation. These techniques offer new ways of looking at the large accumulations of archived data, for example, that lie buried in CRM reports and museum basements. Although traditionally these resources have seldom been the primary focus of either research or management initiatives, we have at our disposal new tools that are capable of exploiting this valuable information in far more resourceful and efficient ways. Integrative research tools such as GIS offer the added advantage of being able to incorporate data from a wide variety of nontraditional and nonarchaeological sources (e.g., census data, photographs, geophysics, aerial remote sensing, and others). Furthermore, these approaches are capable of integrating new information in a manner that can transform both old and new data into considerably more than a sum of their individual parts.

There is another equally important role for many of these new research tools. If models of our changing cultural and physical landscape are to be improved by using a truly dynamic concept of archaeological significance, we need to avoid relying on management strategies that can only *react* and never anticipate. Tools such as GIS and other methods of spatial-temporal modeling make it possible to explore many more dimensions of our data and evaluate cultural resources in a far more comprehensive and systematic fashion. Since significance is polymorphic, we need to use multidimensional tools that can assess the levels of complexity that are clearly associated with it. By underutilizing these analytical tools and approaches, we are failing to register levels and dimensions of significance that are well within our grasp.

As noted in the discussion of *Concept 17*, a wide variety of non-destructive research tools can also be used in a more regular and innovative fashion to evaluate significance. At the moment, however, the full potential of non-destructive field methods in this context continues to be underexploited with regard to both ground-based methods (such as geophysics) and aerial ones (e.g., high-resolution air- and space-borne remote sensing).

While the expansive list of significance concepts discussed in the literature represents a formidable challenge for CRM, the broader application of these types of emerging technologies and new approaches will ensure that our evaluations of significance are not only more comprehensive and efficient, but also more insightful and responsible. In addition, by continuing to work at developing more imaginative and pragmatic solutions to the rigorous demands of CRM (in both theoretical and methodological terms), we can continue to make progress in addressing many of the neglected ideas on our broad and demanding agenda. In this respect, Schiffer and House (1977a) have reminded us:

***"The tension zone in substantive research between the known and unknown in general archaeological theory, method and technique is the fertile ground for innovation... While we do need to evaluate research potential and sometimes play it safe, we also need to take calculated risks for the vitality of archaeology. To the extent that we can predict research potential we should do so. But let us not forget that the true***

*frontiers of knowledge in science are likely to lie considerably beyond current standards of what is feasible."*

If effective significance evaluation and resource management is to become a reality, and if new site types, locations, and relationships are to be discovered and explored, we need to be less reticent about taking risks, applying innovative methods, and championing research in CRM. A considerable amount is at stake here. Maintenance of the status quo will have considerable costs for our discipline not only in terms of an immediate loss of flexibility and understanding, but a more subtle and insidious forfeiture of opportunity in the longer term. At particular risk are the opportunities available to future generations for understanding patterns, associations, and classes of materials which we (in the present) either dimly perceive or have not even begun to suspect.

## **Explicit Evaluation Criteria and Professional Accountability**

Although the use of more holistic management strategies and new technologies offers many promising opportunities, progress is required in another context before many of the more ambitious goals of CRM can be addressed. The key element that has been missing in many of the discussions summarized in this bibliography lies at an operational, or field, level where development of explicit, defensible, and replicable criteria for evaluating significance are needed.

Predictably, evaluations of archaeological significance and the context in which those decisions are framed have remained far from static. As new issues and technologies have emerged, questions concerning how to evaluate the importance or significance of cultural resources have become more complex. Equally, the number of axes on which these variables are measured and the possible indices used to evaluate them have both expanded. Significance evaluations (along with a broad range of other major issues of interest to archaeologists) have been affected by these developments to the degree that there are no generally agreed procedures, or measures, for operationalizing strategies designed to tackle significance assessment 'in the trenches'.

Part of the archaeological reticence in developing an explicit set of attributes or principles for evaluating significance is no doubt due to the difficulty of achieving intellectual closure on such a dynamic and relative phenomenon without creating unworkable, mechanistic, and simplistic check lists. As Raab and Klinger (1979) pointed out:

*"Any attempt to specify a priori what might be of research value, will, in fact, be based on current research values."*

However, just as we would not assume a uniformity of cultural values within the societies we study as anthropologists, it would be a mistake to regard the archaeological community as having one view of current or future research values, or having

multiple views that were all entirely congruent and forward-looking. The difficulties associated with establishing evaluation criteria do not absolve us of the responsibility of making them explicit and available for critical scrutiny, both within the profession and by the public at large.

Resistance to the development of more explicit attributes and principles for evaluating significance has developed for other reasons as well. Plog (1981), for example, has argued:

***"Attempts to define significance, develop more detailed criteria for significance, or even develop a non-expansive list of significant sites would all have detrimental effects on significance evaluations since they place too many restrictions on evaluations."***

Nevertheless, it is possible to generate criteria that have different degrees of specificity, that represent flexible guidance (not rigid templates), and that (while not universal) *do* need to be considered in most contexts. The concept of representativeness, for example, provides an excellent starting point for the definition of more specific sets of attributes that can be used to cascade downward to evaluate significance at the scale of individual sites or their component parts, or alternatively, scale upward toward an evaluation of sites and landscapes at a regional level. The establishment of these types of nested criteria need not represent or imply a hierarchy of more and less important variables. Instead, the characteristics used to evaluate significance can be seen in a more flexible way, as a *heterarchy* (Crumley and Marquardt 1990; Ehrenreich et al. (eds.) 1995). The idea of a heterarchy has been defined by Crumley and Marquardt (1990: 74) as:

***"...a structural condition in which elements have the 'potential of being unranked (relative to other elements) or ranked in a number of ways, depending on systemic requirements'...In contrast, hierarchical structure is one in which some elements, on the basis of certain factors, are in the condition of being ranked subordinate to others."***

By using this concept to design significance evaluation strategies the value of different attributes (or sets of attributes) could be varied according to the context and objectives of the evaluation. *At the same time, it is possible to maintain common and explicit frames of reference.* Although this strategy does not pretend to resolve all the practical issues of applying specific evaluation strategies, it can provide the basis for establishing broader, more explicit and more consistent assessment methods. While certain general themes and attributes for measuring significance can be defined to direct archaeological attention to new issues, relationships, or data types, they do not necessarily have to constrain or homogenize individual assessments or initiative. Rather than being seen as a rigid straightjacket that cannot possibly anticipate all the variations and attributes that might have a bearing on significance in a given area, these measures help provide a general framework for evaluation. In short, it is possible to create explicit categories of significance assessment that are not so specific that they can be used in only one way (or in one specific geographic/cultural context), but not so general as to be banal and without value.

Ultimately, the most compelling reason for establishing (and publishing) explicit schemes for evaluating significance concerns the issue of *accountability*. Given the responsibilities we have for the management and conservation of our national and global heritage, we need to present clear, intellectually defensible arguments to support our choice of strategies and assessment criteria. The issue of accountability is not only a contemporary concern, but one that is of central importance from an historical perspective. As and when public and scientific perceptions of significance change, it will be crucial to understand how resources were managed in the past, what criteria were considered most important, which variables were neglected, and how these choices have affected the cultural record that remains.

## Future Plans and Objectives for the Work Unit

Given the title of the work unit (the *Objective Evaluation of Cultural Resources*) and the ambitious agenda outlined above, it is clear that the highest priority for the next stage of research will be the development of at least one case study illustrating how new approaches to significance evaluation can be operationalized and tested in the field. The case study currently being developed represents an effort to put into practice many of the most important ideas and suggestions summarized above.

Having undertaken a systematic review of the archaeological literature on significance it is obvious that archaeologists and cultural resource managers need to move beyond rhetorical discussions to the pragmatic task of outlining and *publishing* concrete evaluation strategies. Exploratory, theoretical discussions and practical methodologies are necessary and important complements to one another, but are more productive when pursued in tandem. In planning the next stage of research in this work unit, it is fitting that, having extolled the virtues of new approaches and the intellectual opportunities of the "*tension zone*", the same burden of rigor and responsibility be addressed in developing a field-tested model.

Similarly, in designing further aspects of this work there are other opportunities available for putting concepts into practice. First, an Internet version of this document will be published on the WES WWW home page. Electronic publication of the report is designed to increase the availability of this information and promote greater accountability by making this research available for widespread (international) scrutiny. The cultural resource management experience of colleagues in other countries (e.g., Darvill et al. 1987) suggests, for example, that a wider view of the significance issue may be extremely valuable. Second, in recognition of the fact that significance and significance strategies are very dynamic, a questionnaire has been designed to:

- a. Describe the current practice of significance evaluation *and*,
- b. Evaluate the potential of methods, criteria and techniques that may appear in the gray literature but have yet to appear in the published peer-review literature.

By enhancing the visibility of existing formal models (which may be already in use in the field), it is hoped that choices and alternatives will be made available to practitioners in the field who can selectively adopt or reject them depending on their particular circumstances. Thus, the specific perspectives adopted by this work unit can be compared to a variety of other methods and strategies that do not appear in the published professional literature. By using a field-tested case study, together with new analytical tools, the results of the questionnaire, and the technology transfer opportunities afforded by this research, the cumulative results of this work are intended to provide a complementary suite of methods and ideas for addressing significance in a day to day, operational, context. In this way, it is hoped that the combined products of the work unit will stimulate new discussion about significance and prompt, fresh, and pragmatic approaches to resource evaluation and management.

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# **Appendix A**

## **List and Description of Major Significance Concepts**

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## Summary List of Significance Concepts

1. ***Significance as Dynamic and/or Relative***  
Idea that archaeological significance is neither static (since it changes through time) nor is it inherent to any body of cultural materials; instead the importance or value attributed to cultural resources will vary, for example, according to ethnic affiliation, gender, education, income, etc.
2. ***General Categories for Defining Significance***  
Articles that define general analytical domains or frames of reference for evaluating significance (e.g. historical, social, monetary, etc.).
3. ***More Explicit Evaluation Criteria***  
Articles that emphasize the use a well-defined set of criteria for evaluating, or prioritizing, sites with respect to archaeological significance; some of these take the form of quantitative schemes for ranking or comparing groups of sites, while others define specific characteristics such as “integrity,” “clarity,” etc.
4. ***Significance vs. Non-Significance***  
Articles proposing that the concept of non-significance is central to the evaluation of cultural resources. Some discussions promote the idea that the focus of evaluations should be on non-significance (rather than significance). It is argued that an emphasis on non-significance tends to focus attention on a larger segment of the archaeological record. By placing a greater importance on non-significance, archaeologists are forced to confront more directly the key issue of which sites will be sacrificed and destroyed.
5. ***Need for Representative Samples***  
Articles supporting the idea of preserving the greatest diversity of cultural activities characteristic of a particular time, region, and cultural group.
6. ***Cultural Resource Redundancy***  
Articles advancing the idea that special efforts to preserve and conserve cultural resources must be restricted to a finite number of sites (characteristic of groups, periods, and regions), to avoid expensive duplication of information and effort.
7. ***Regional Research Designs***  
Articles concerning the concept of a regional research design and its utility for evaluating archaeological significance.
8. ***Explicit Problem Orientation***  
Articles that discuss the explicit use of a problem-oriented research design for assessing archaeological significance.

9. ***Is CRM Research or Not?***  
Articles that address arguments for, and against, the idea that CRM and basic research represent fundamentally different forms of archaeology.
10. ***Archaeological Preserves/Conservation Areas***  
Articles advocating the creation of large protected areas of land in order to preserve a broad range of cultural activities and landscapes for future archaeological research.
11. ***Proactive Planning and Mitigation Strategies***  
Articles that promote approaches to significance evaluation that anticipate threats and adverse impacts to cultural resources before they take place.
12. ***Public Education/Involvement and CRM***  
Articles advocating greater interaction between archaeologists and the public to promote a better, more sympathetic understanding of the importance of cultural resources, and the processes by which archaeological resources are evaluated.
13. ***Ethnic Significance***  
Articles that refer to the idea that archaeologists need to be better educated and sensitive to the belief systems and values of native peoples; that is, decisions regarding significance need to be made in light of an improved knowledge base, and a more enlightened dialogue with native communities.
14. ***Interdisciplinary Approaches***  
Articles promoting the use/exchange of approaches and expertise from subject areas beyond one's specific expertise or research emphasis (particularly from fields outside archaeology) for the purposes of significance evaluation. Several papers also emphasize the value of archaeological data for non-archaeological research and analysis.
15. ***Innovative and Expansive Assessment Strategies***  
Articles highlighting the need for new theoretical and/or methodological strategies for evaluating archaeological significance; some suggest measures that are designed to extend our existing definitions and understanding of significance, and help us to improve our evaluation procedures.
16. ***Applied Holistic Evaluations***  
Case studies that explicitly develop broader contexts for formally evaluating significance using approaches, data, or criteria from both archaeological and non-archaeological sources. These discussions attempt to move beyond a simple concept of "representativeness" by employing an expanded set of tools and ideas for evaluating complex cultural resource inventories.

17. ***Use of Non-Intrusive Field Methods***  
Articles that clearly call for the use of non-intrusive methods of identifying, analyzing, and/or protecting cultural resources.
18. ***Data-Supported Significance Discussions***  
Articles involving the use of real archaeological data to illustrate ideas, or examples, of significance evaluation in practice (rather than purely theoretical discussions).
19. ***Multi-Phase Field Investigations***  
Articles emphasizing repeated field investigations in order to establish significance, rather than single surveys.
20. ***Adequacy and Value of the National Register***  
Articles concerned with the suitability of the National Register as a basis for making archaeological significance evaluations. Generally, opinions fall into two basic categories, suggesting the National Register criteria are either: (a) too broad, or not specific enough, to be of value to archaeologists, or alternatively, (b) well suited to significance evaluations in their present form.
21. ***Federal Guidance***  
Articles concerned with the explanation of laws and regulations dealing with significance evaluations, and their implementation.

# **Appendix B**

## **Matrix Listing of Significance Concepts and Annotated Literature [Publications Arranged in Chronological Order]**

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Significance as Dynamic/Relative	29 Sharrock/Grayson 1979	30 Raab and Klinger 1979	31 Sherfy and Luce 1979	32 Tainter 1979	33 Barnes et al. 1980	34 Klinger and Raab 1980	35 Fisher 1980	36 Lynott 1980	37 US Dept. Interior 1980	38 Wendorf 1980	39 Plog 1981	40 Stuart and Gauthier 1981	41 Cleeland and Doyel 1982	42 Doyel 1982	43 Green 1983	44 LeBlanc 1983	45 Tainter and Lucas 1983	46 Dunnell 1984	47 Lipe 1984a	48 Lipe 1984b	49 Derry 1985	50 King 1985	51 Savage 1985	52 Meighan 1986	53 Butler 1987	54 MacDougal and Brito 1987	55 Noble 1987	56 Reed 1987
General Significance Categories																												
More Explicit Evaluation Criteria																												
Significance vs. Non-Significance																												
Need for Representative Samples																												
Cultural Resource Redundancy																												
Regional Research Designs																												
Explicit Problem Orientation																												
Is CRM Research or Not?																												
Archaeological Preserves																												
Proactive Planning/Mitigation Strategies																												
Public Education/Involvement in CRM																												
Ethnic Significance																												
Interdisciplinary Approaches																												
Innovative Approaches																												
Applied Holistic Evaluations																												
Use of Non-Intrusive Field Methods																												
Data-Supported Significance Discussions																												
Multi-Phase Field Investigations																												
Adequacy/Value of the National Register																												
Federal Guidance																												

Significance as Dynamic/Relative	57 Tainter 1987	58 ACHP 1988	59 Grumet 1988	60 Knoeri et al. 1989	61 McClelland et al. 1989	62 Schaafsma 1989	63 Williams et al. 1989	64 Briuer et al. 1990	65 Hardesty 1990	66 McManamon 1990	67 Parker and King 1990	68 Scott 1990	69 Smith 1990	70 Williams et al. 1990	71 Wilson 1990	72 Lee and McClelland 1991	73 McClelland 1991	74 US Dept Interior 1991	75 Delgado 1992	76 Delgado and Foster 1992	77 Grumet 1992	78 Leone and Potter 1992	79 ACHP 1993	80 Townsend 1993	81 Peacock 1994	82 Trierweiler 1994	83 Perry n.d.
General Significance Categories																											
More Explicit/Evaluation Criteria																											
Significance vs. Non-Significance																											
Need for Representative Samples																											
Cultural Resource Redundancy																											
Regional Research Designs																											
Explicit Problem Orientation																											
Is CRM Research or Not?																											
Archaeological Preserves																											
Proactive Planning/Mitigation Strategies																											
Public Education/Involvement in CRM																											
Ethnic Significance																											
Interdisciplinary Approaches																											
Innovative Approaches																											
Applied Holistic Evaluations																											
Use of Non-Intrusive Field Methods																											
Data-Supported Discussions of Significance																											
Multi-Phase Field Investigations																											
Adequacy/Value of the National Register																											
Federal Guidance																											

# **Appendix C**

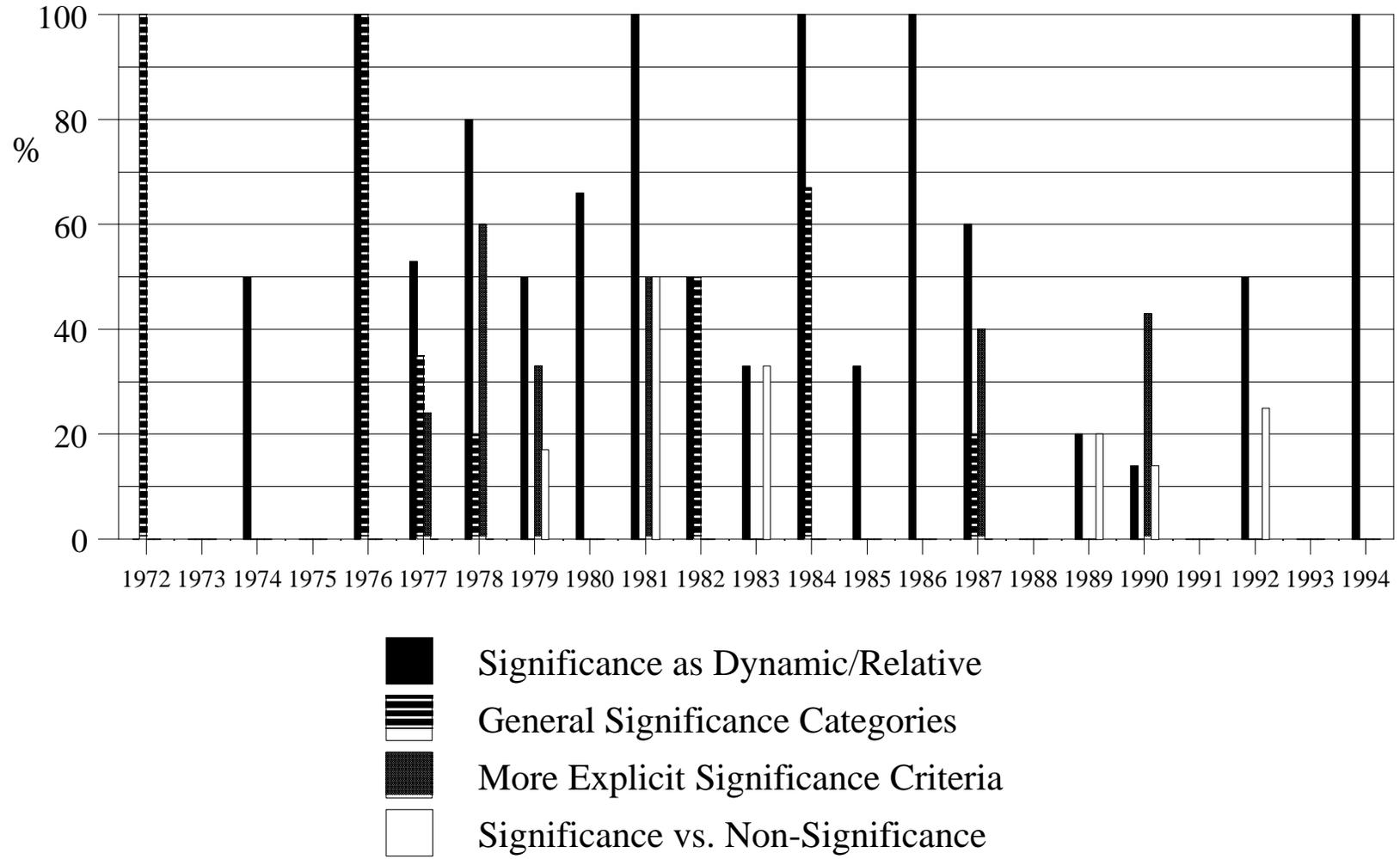
## **Historical Trends for Selective Significance Concepts [Index and Histograms]**

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## Index of Significance Histograms Included in Appendix C

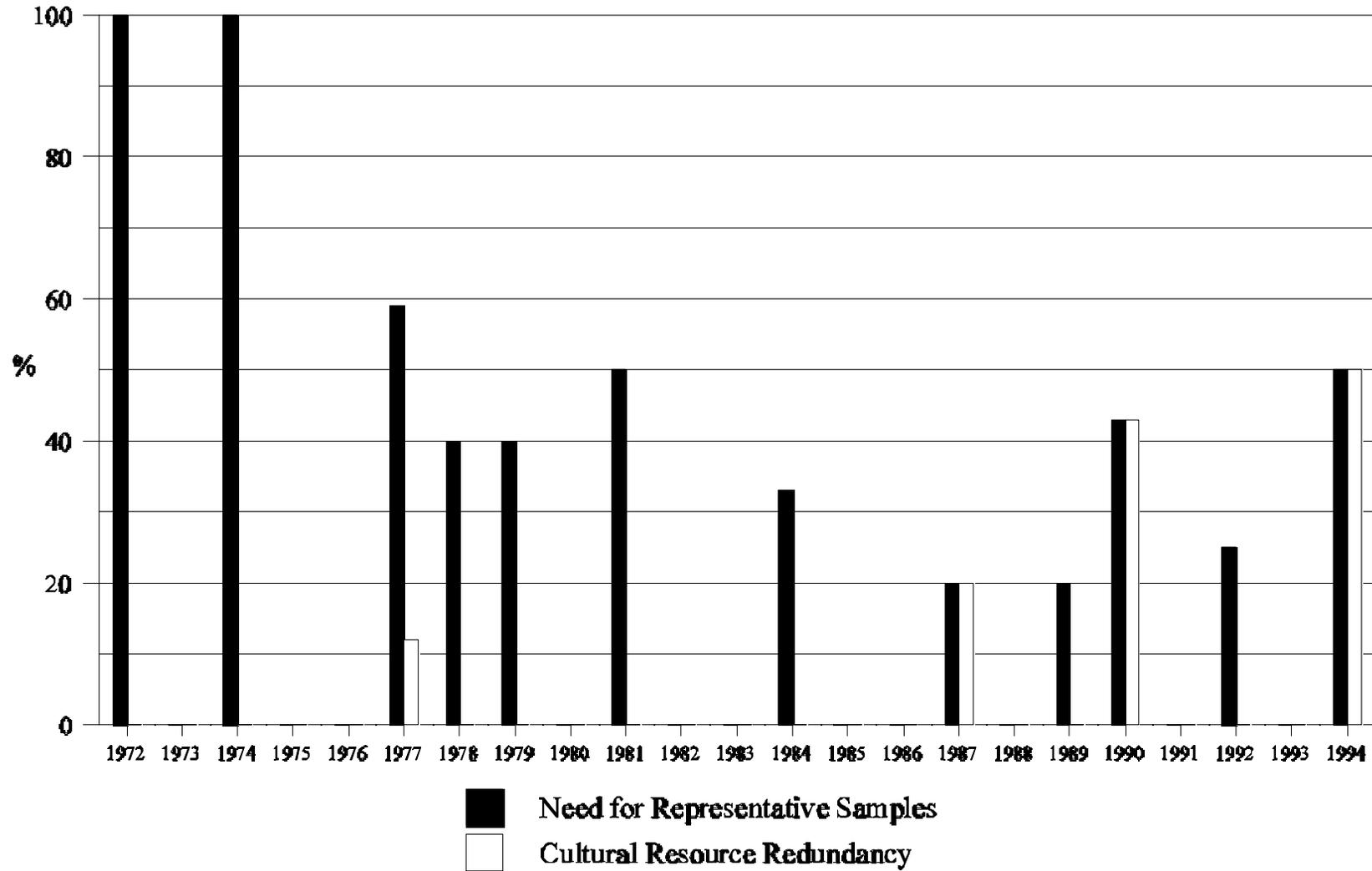
<i>CONCEPT</i>	<i>COMPOSITE HISTOGRAM</i>	<i>SINGLE HISTOGRAM</i>
Significance as Dynamic/Relative	<i>Appendix C.b1</i>	<i>Appendix C.c1</i>
General Significance Categories	<i>Appendix C.b1</i>	<i>Appendix C.c2</i>
More Explicit Significance Criteria	<i>Appendix C.b1</i>	<i>Appendix C.c3</i>
Significance vs. Non-Significance	<i>Appendix C.b1</i>	<i>Appendix C.c4</i>
Need for Representative Samples	<i>Appendix C.b2</i>	<i>Appendix C.c5</i>
Cultural Resource Redundancy	<i>Appendix C.b2</i>	<i>Appendix C.c6</i>
Regional Research Designs	<i>Appendix C.b3</i>	<i>Appendix C.c7</i>
Explicit Problem-Oriented	<i>Appendix C.b3</i>	<i>Appendix C.c8</i>
Is CRM Research or Not?	<i>Appendix C.b3</i>	<i>Appendix C.c9</i>
Archaeological Preserves	<i>Appendix C.b4</i>	<i>Appendix C.c10</i>
Proactive Planning/Mitigation Strategies	<i>Appendix C.b4</i>	<i>Appendix C.c11</i>
Public Education/Involvement and CRM	<i>Appendix C.b5</i>	<i>Appendix C.c12</i>
Ethnic Significance	<i>Appendix C.b5</i>	<i>Appendix C.c13</i>
Interdisciplinary Approaches	<i>Appendix C.b6</i>	<i>Appendix C.c14</i>
Innovative Approaches	<i>Appendix C.b6</i>	<i>Appendix C.c15</i>
Applied Holistic Evaluations	<i>Appendix C.b6</i>	<i>Appendix C.c16</i>
Use of Non-Intrusive Field Methods	<i>Appendix C.b7</i>	<i>Appendix C.c17</i>
Data-Supported Significance Discussions	<i>Appendix C.b7</i>	<i>Appendix C.c18</i>
Multi-Phase Field Investigations	<i>Appendix C.b7</i>	<i>Appendix C.c19</i>
Adequacy/Value of National Register	<i>Appendix C.b8</i>	<i>Appendix C.c20</i>
Federal Guidance	<i>Appendix C.b8</i>	<i>Appendix C.c21</i>

# Concept Citation Frequency



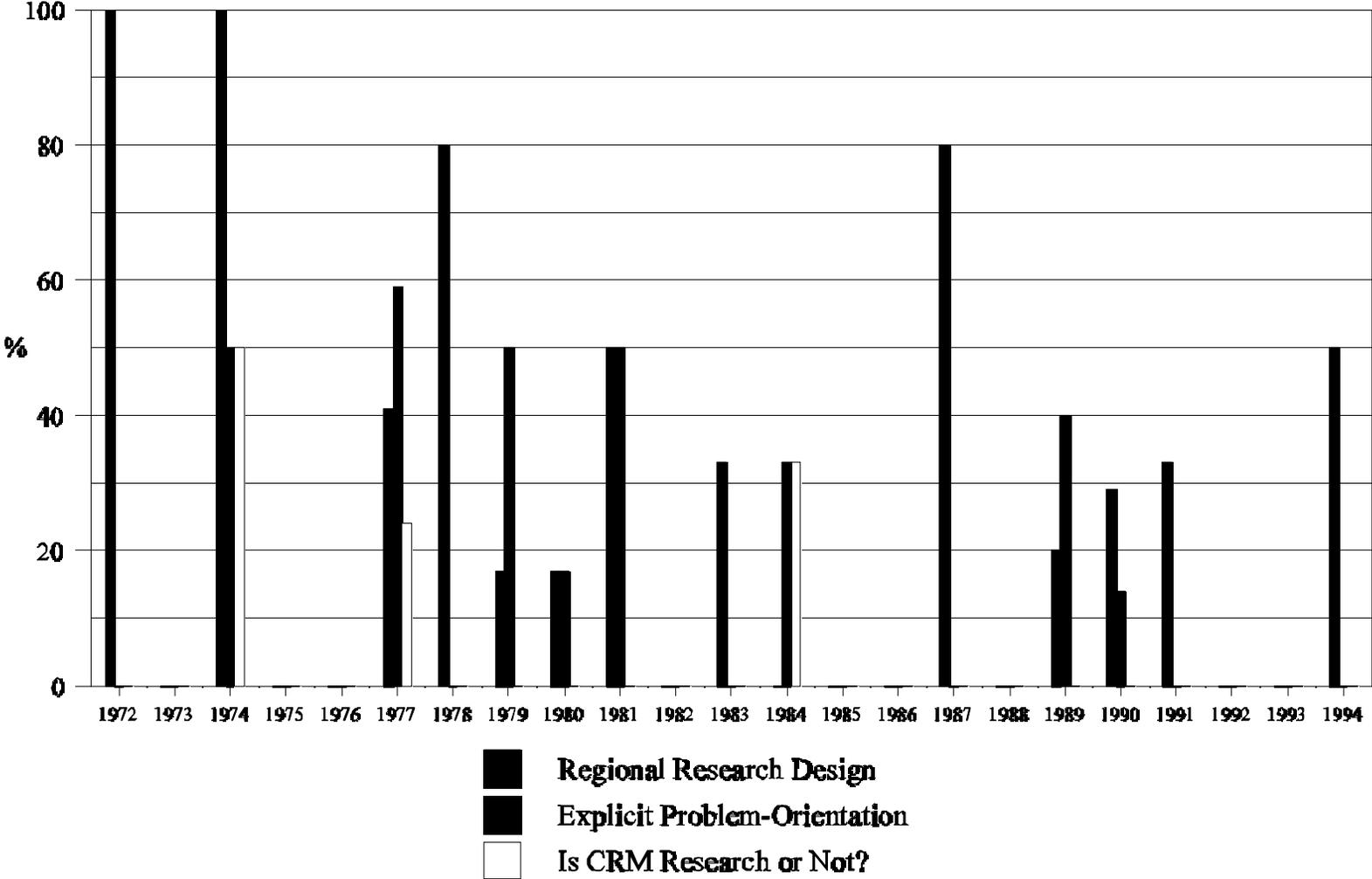
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$$\{\% = (\text{No. Citations} \div \text{No. Articles per Year}) \times 100\}$$



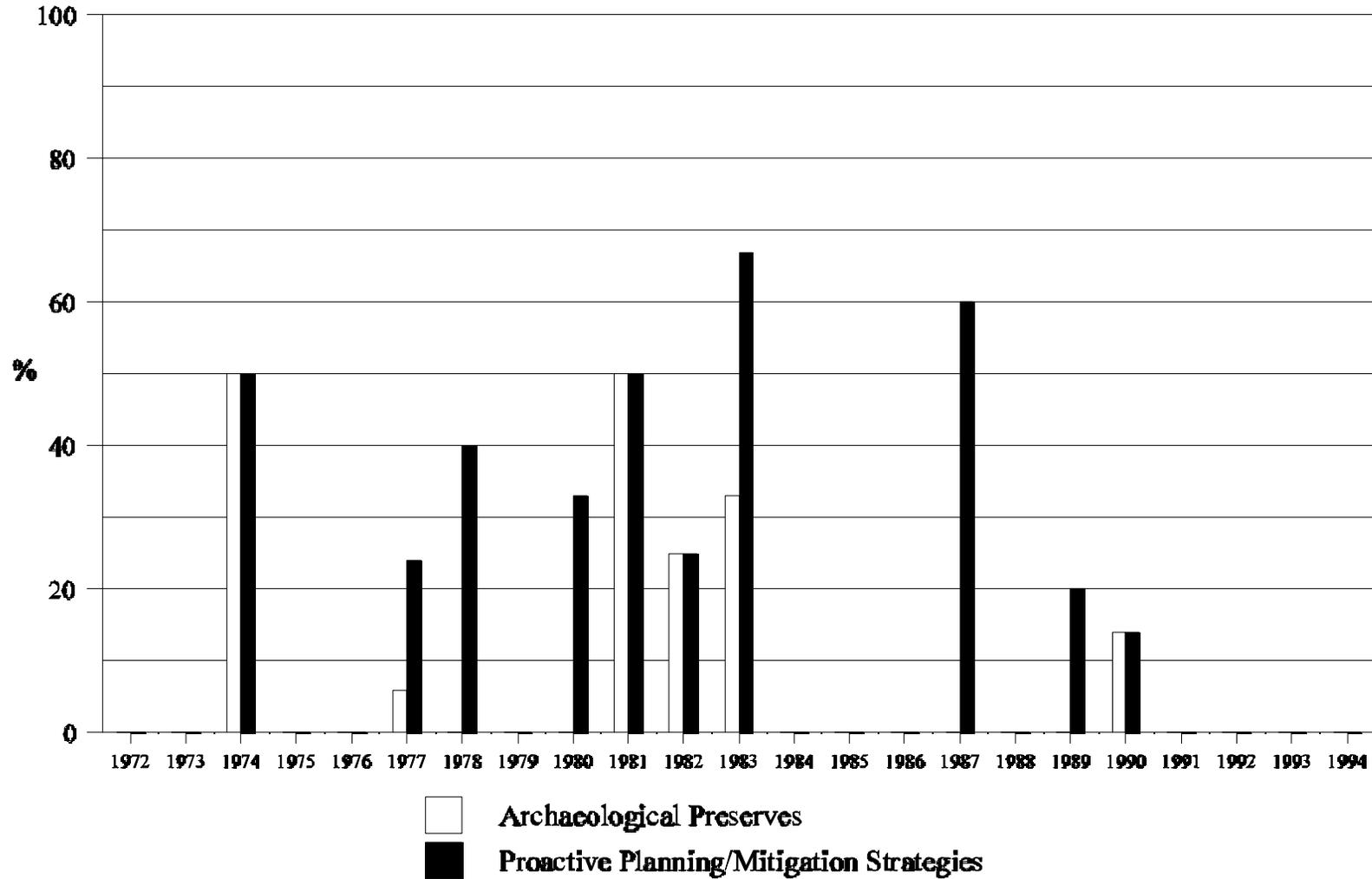
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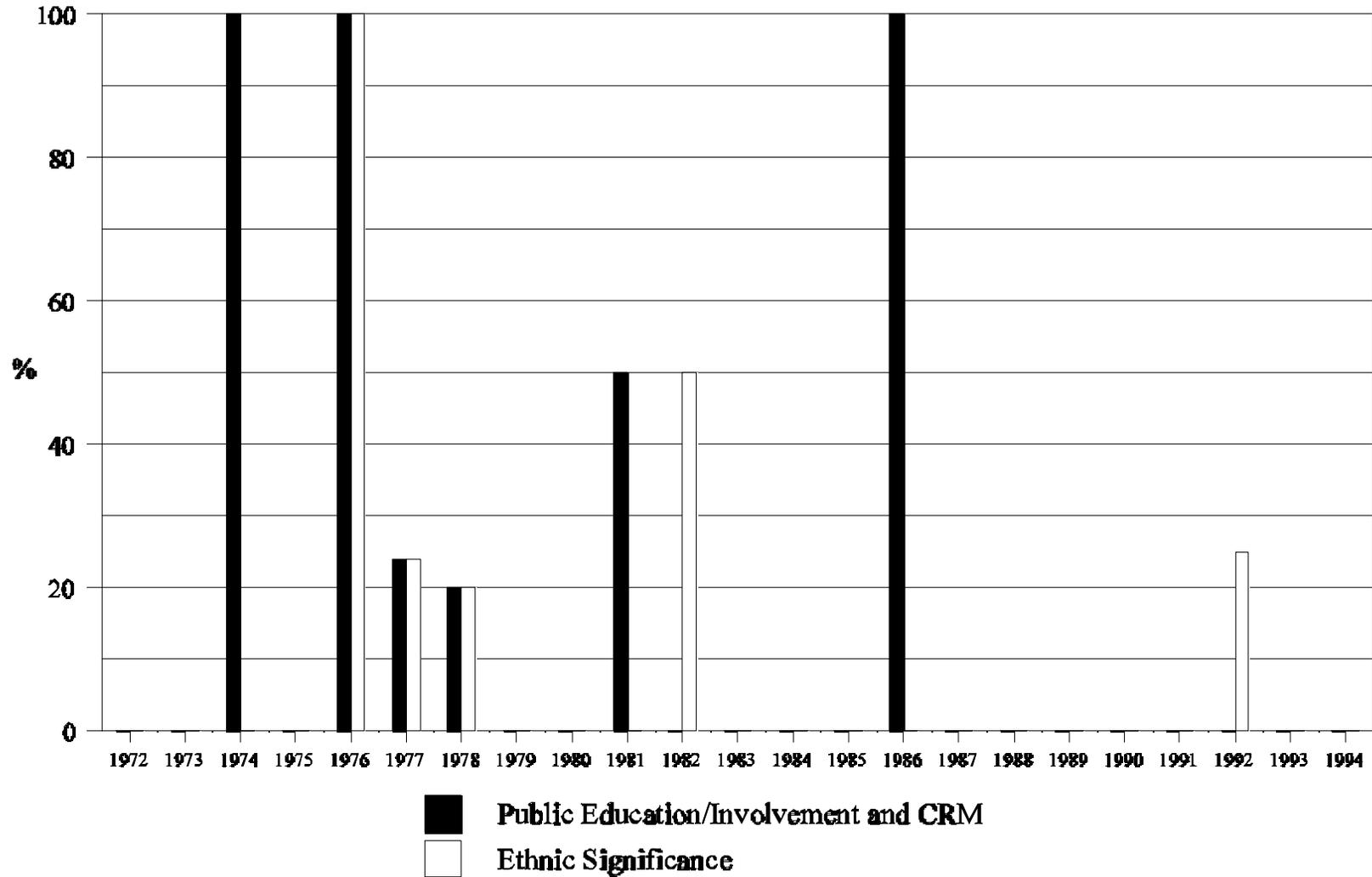
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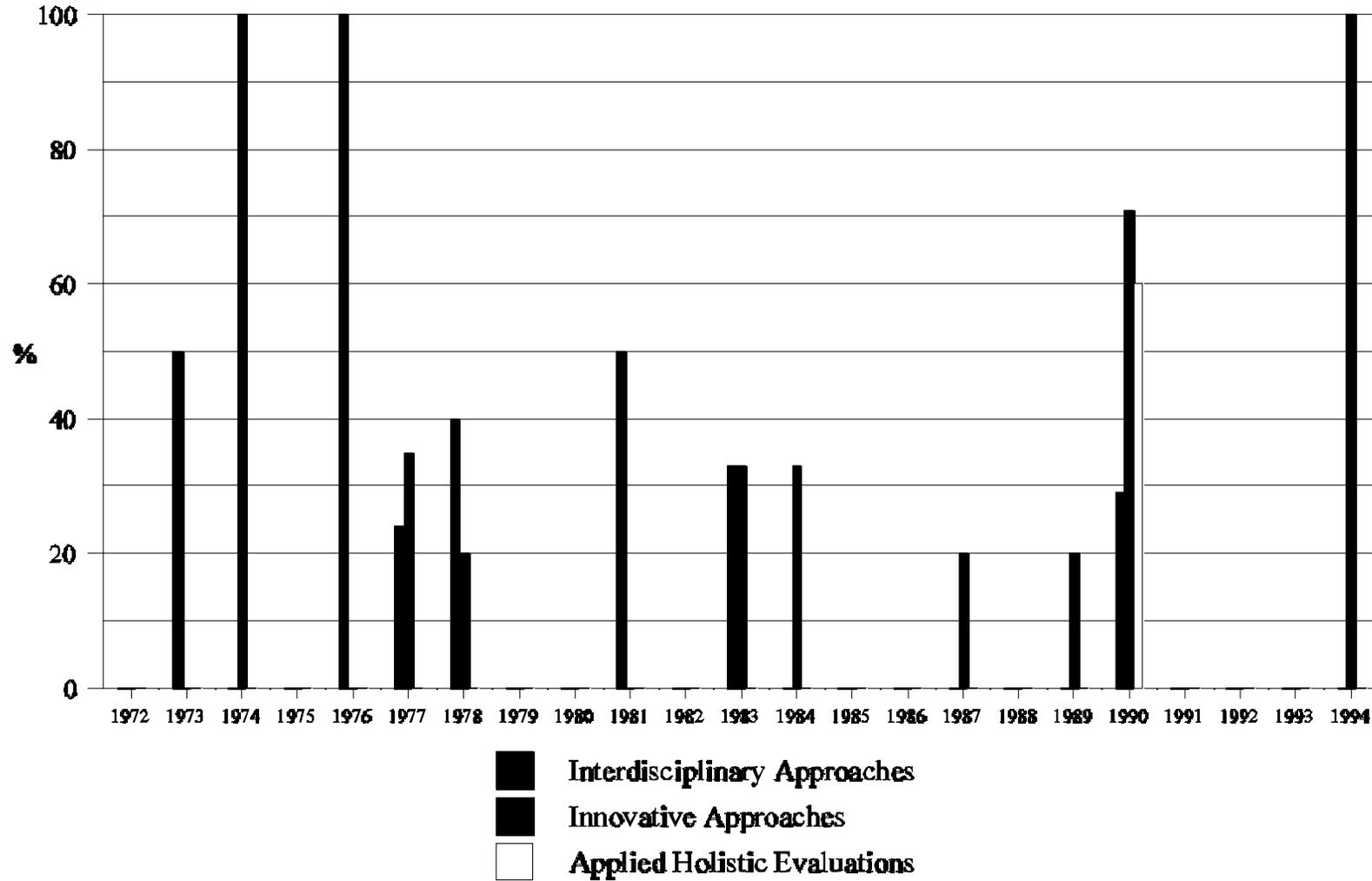
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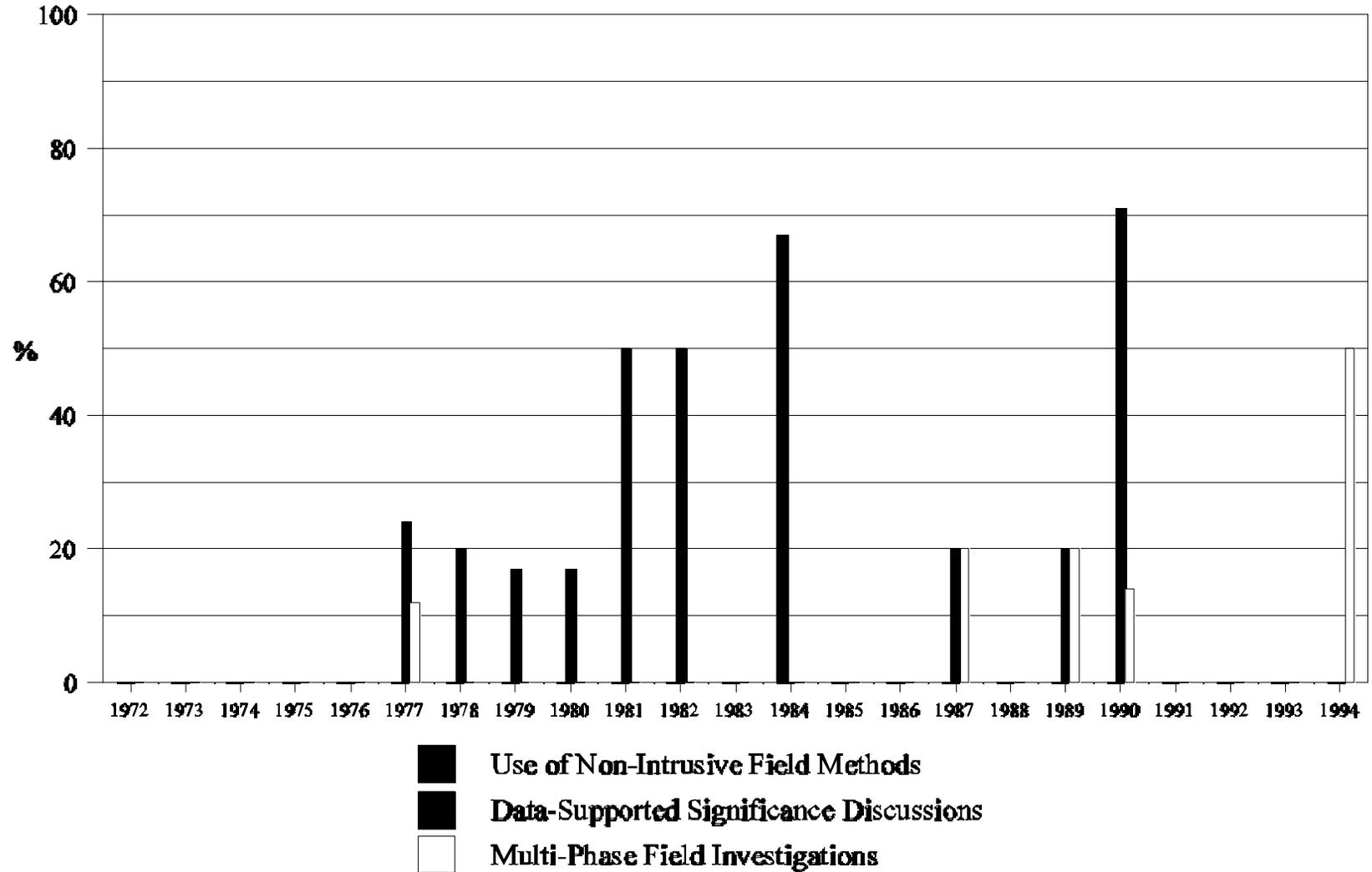
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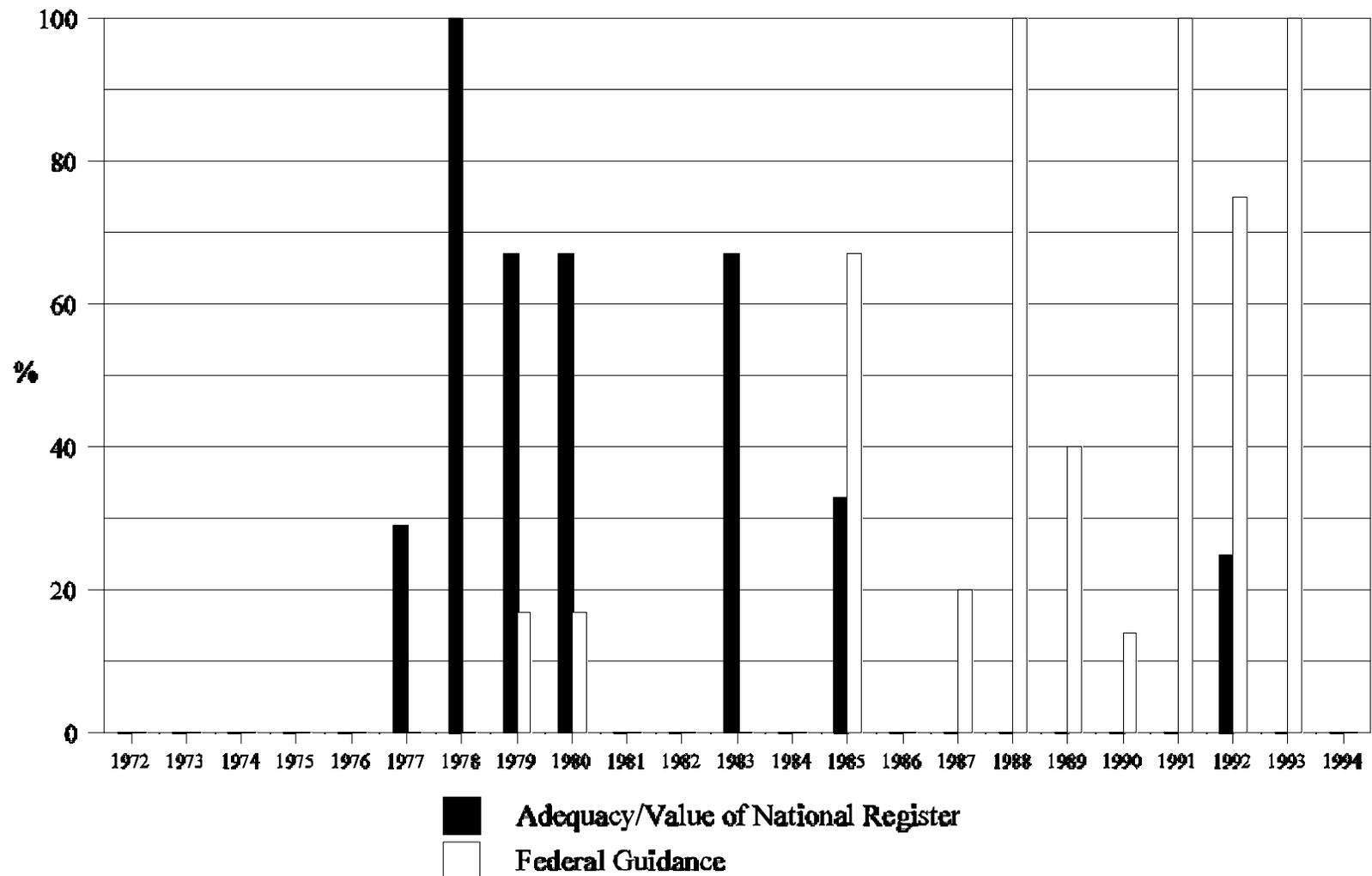
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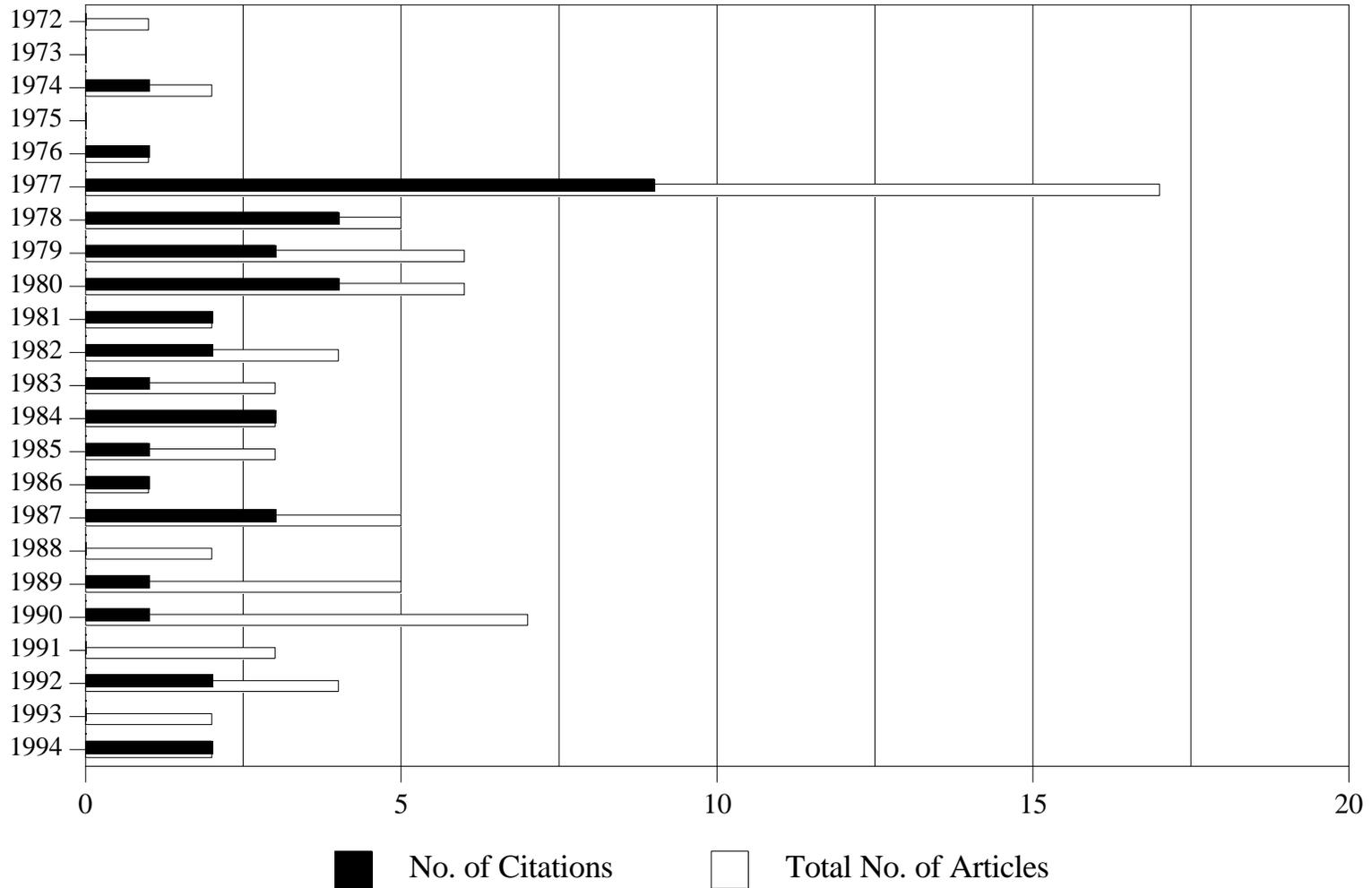


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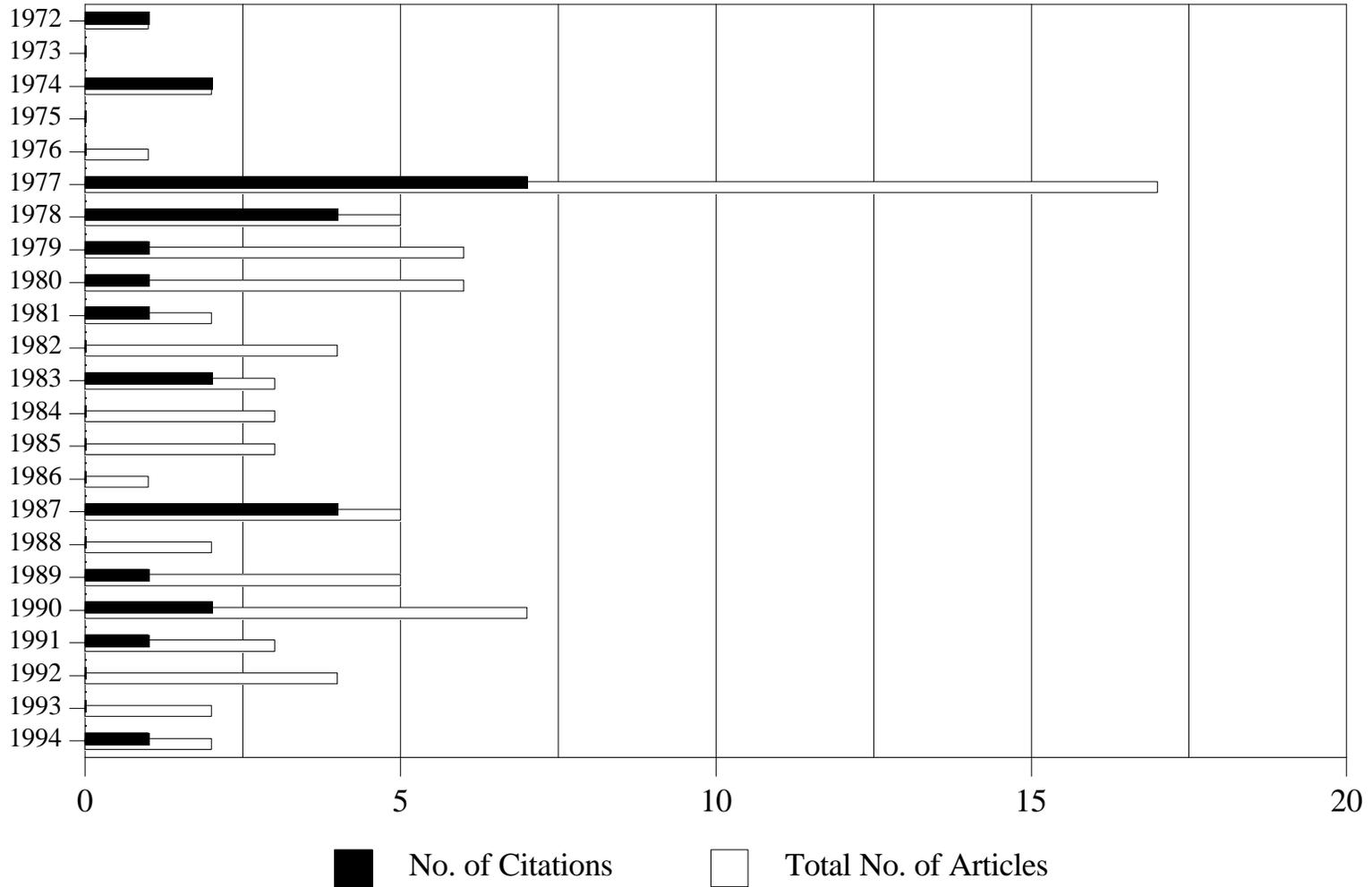
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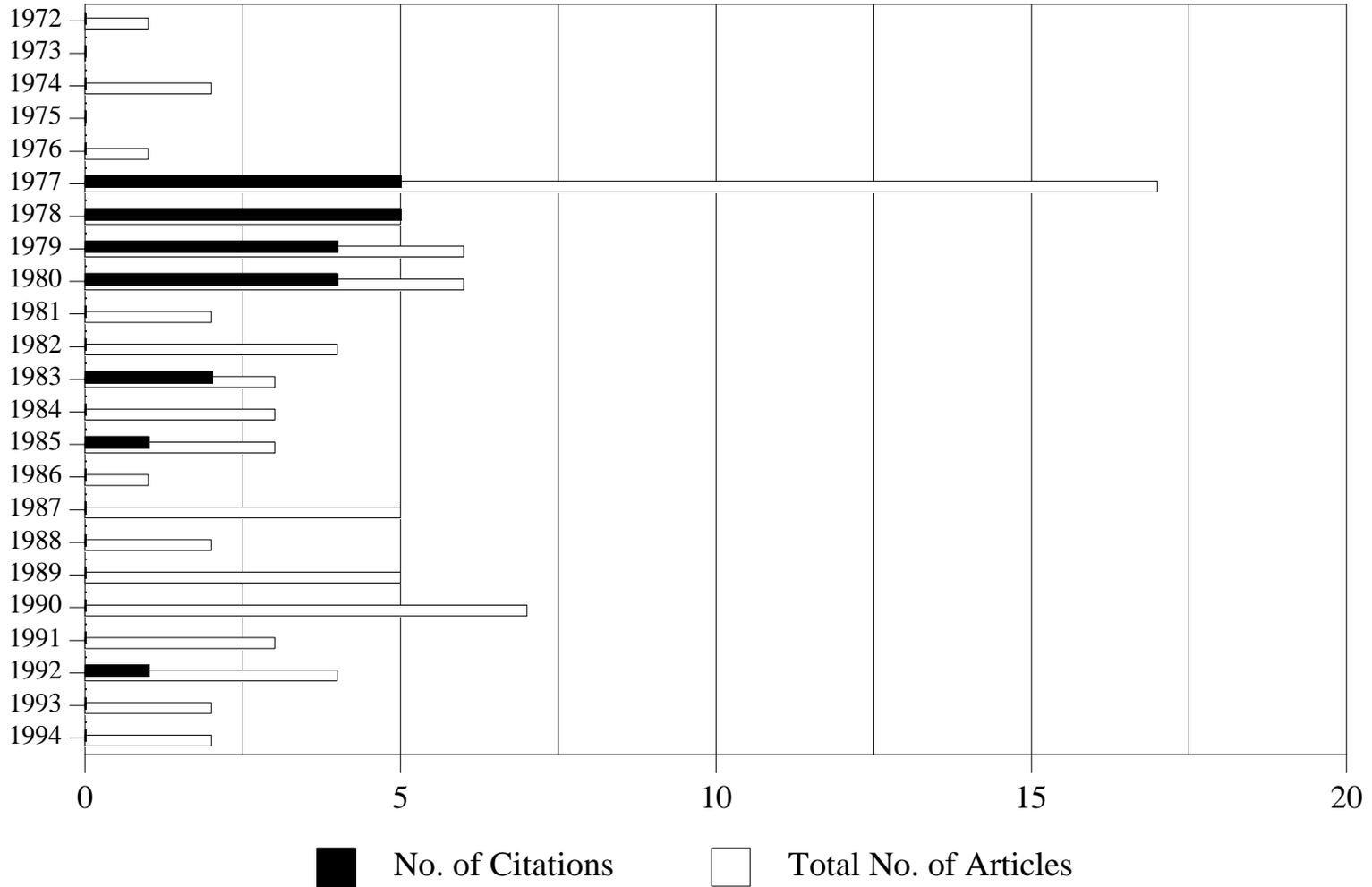
## *Significance as Dynamic/Relative*



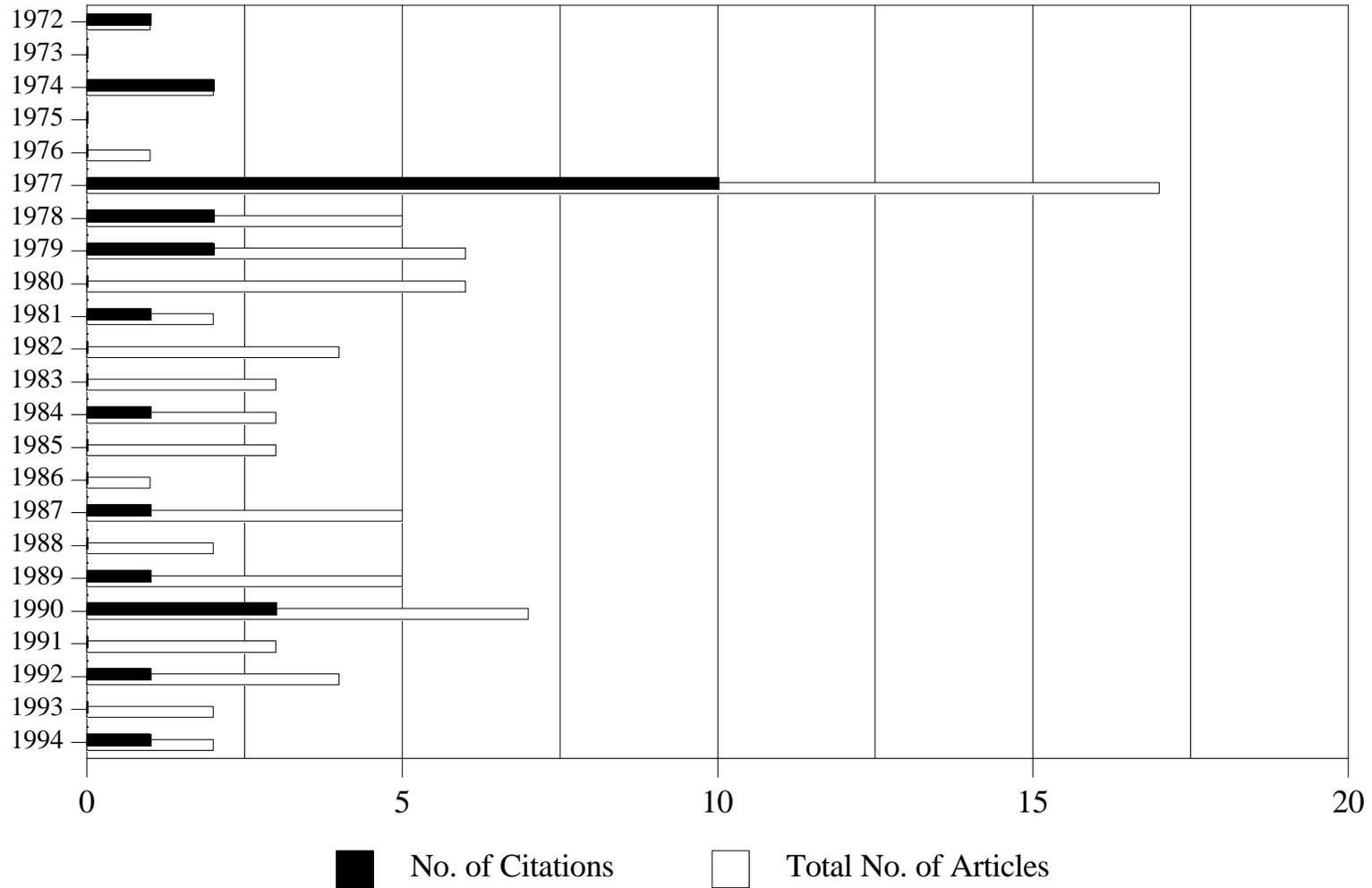
# *Regional Research Design*



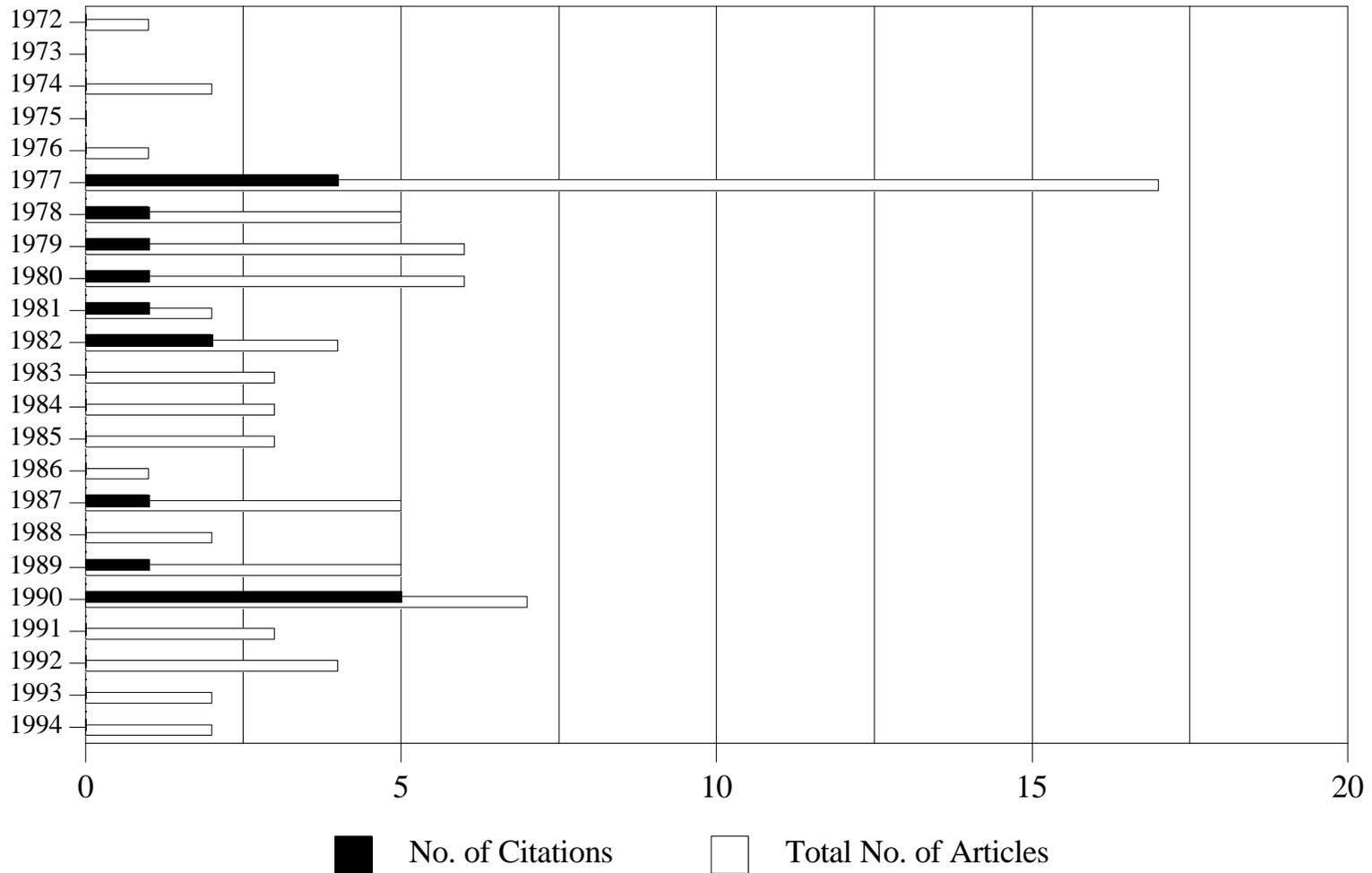
## *Adequacy/Value of the National Register*



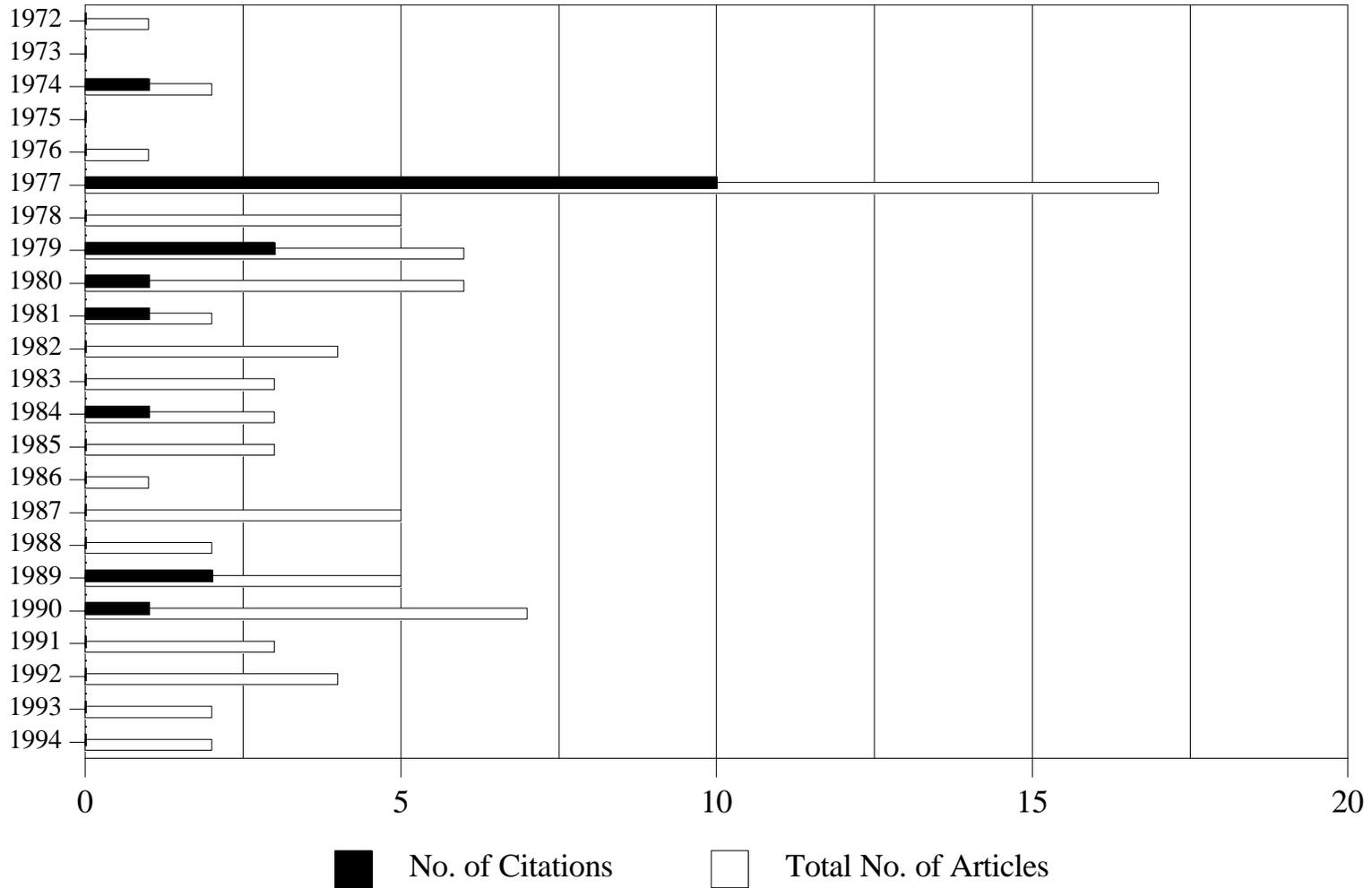
## *Need for Representative Samples*



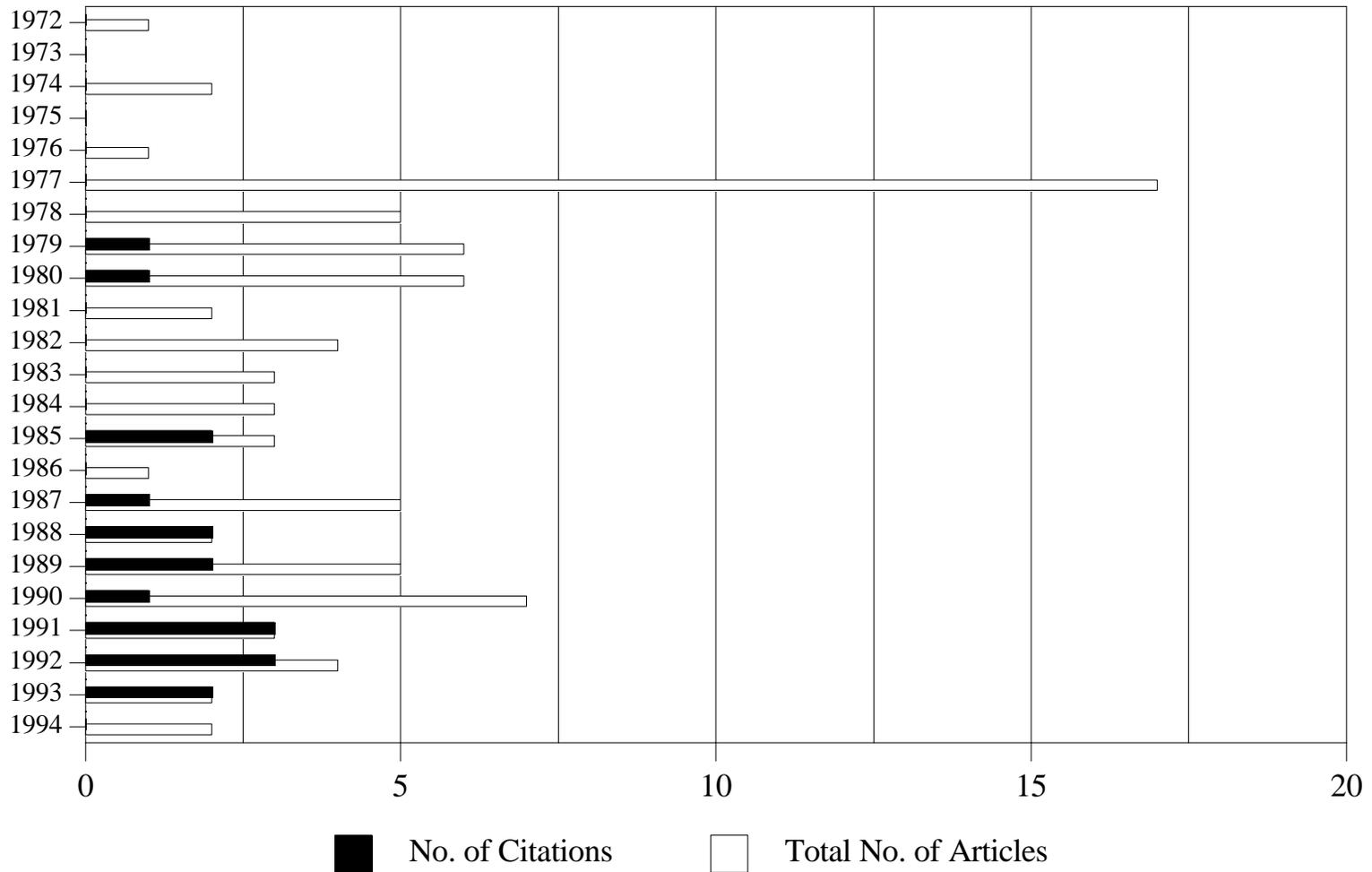
## *Data-Supported Significance Discussions*



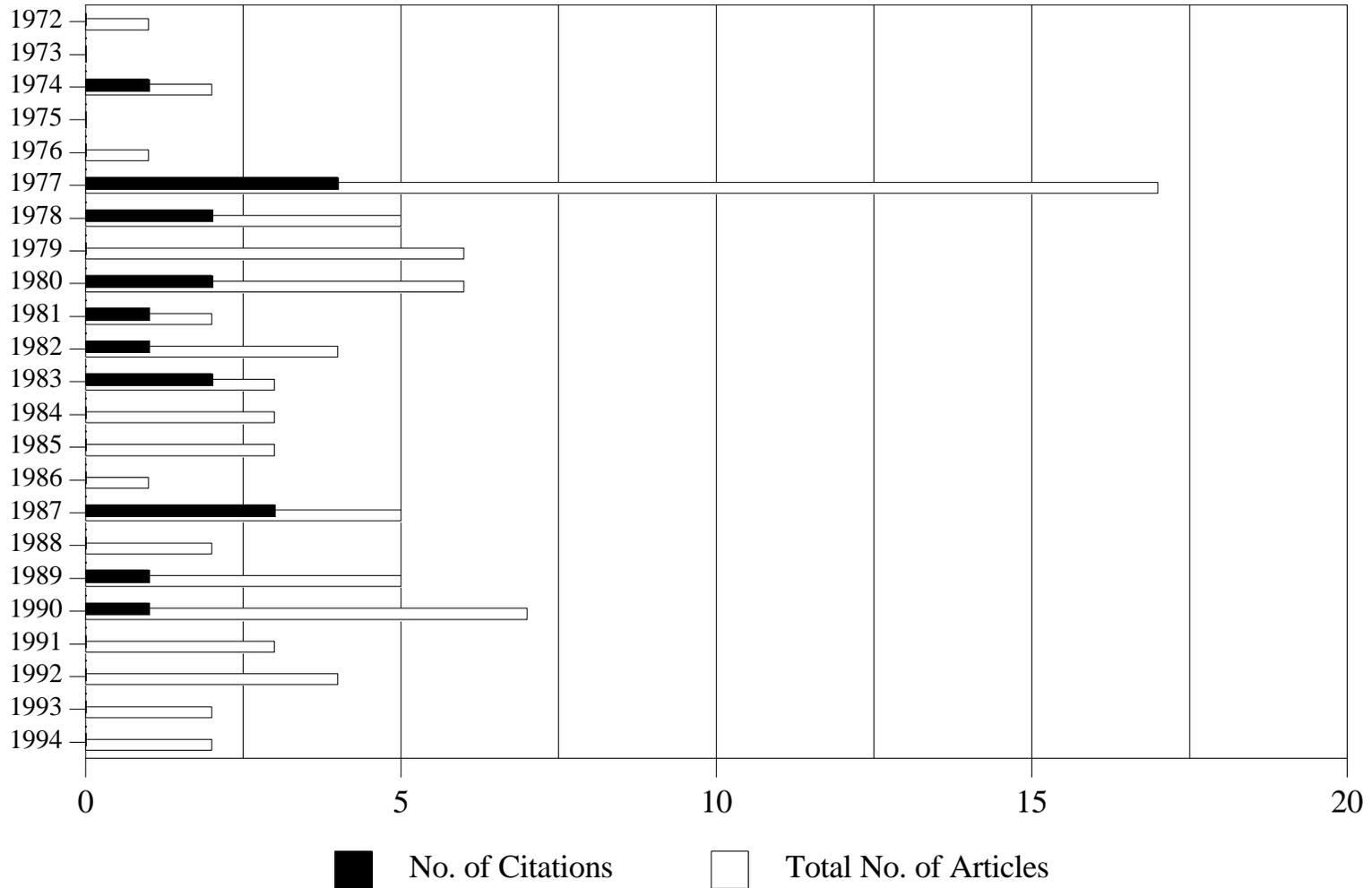
## *Explicit Problem-Orientation*



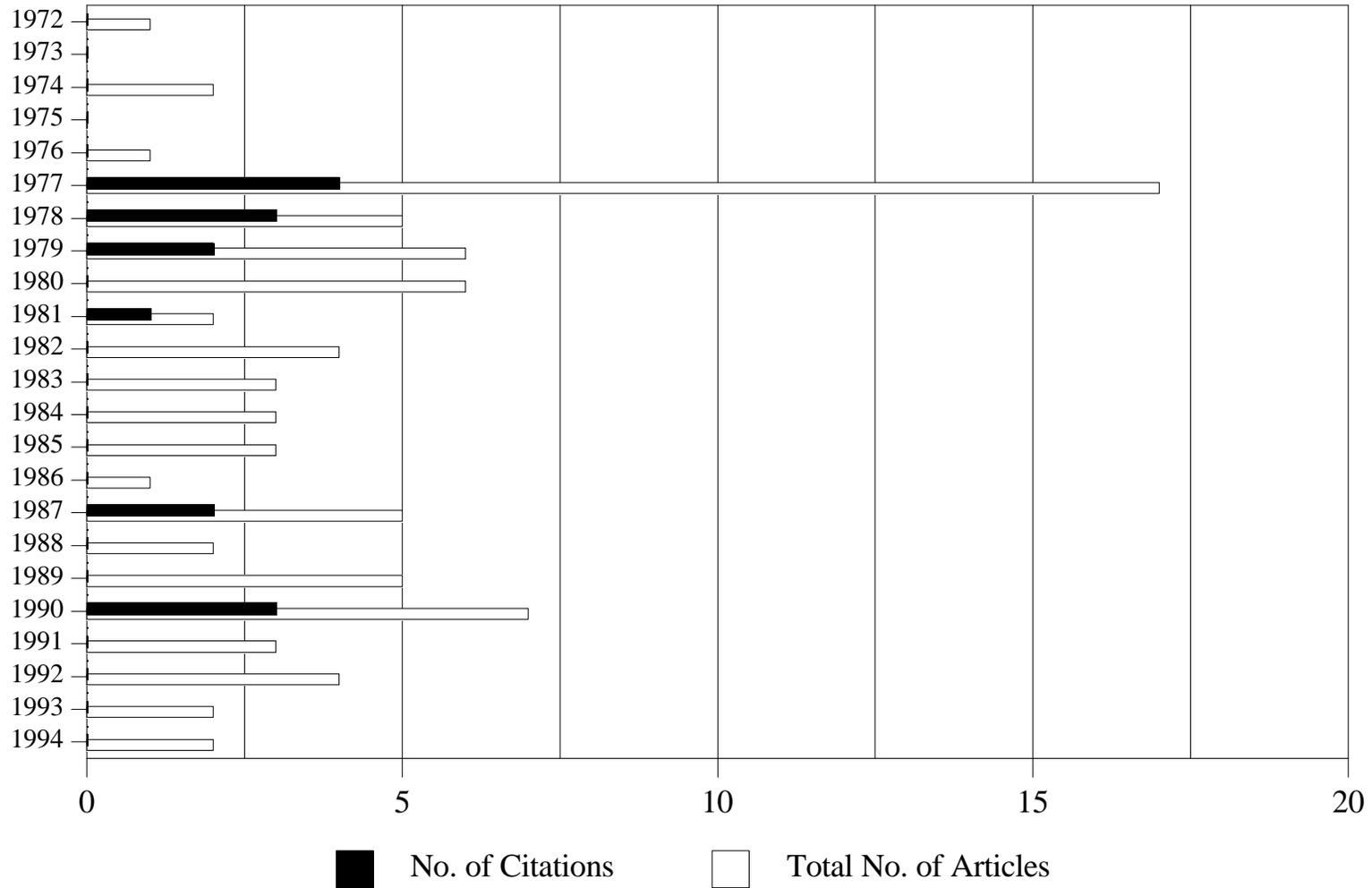
## *Federal Guidance*



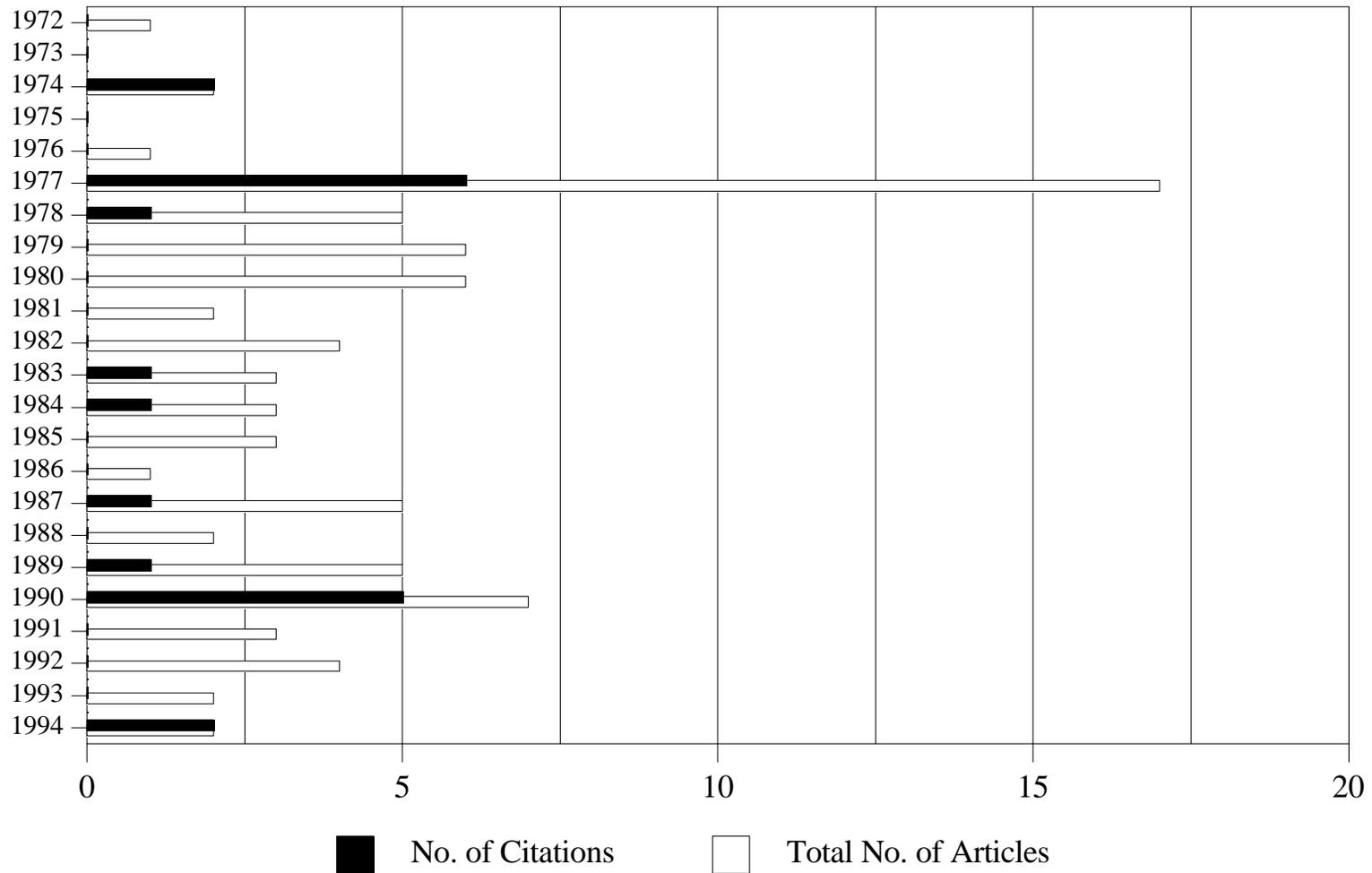
## *Proactive Planning/Mitigation*



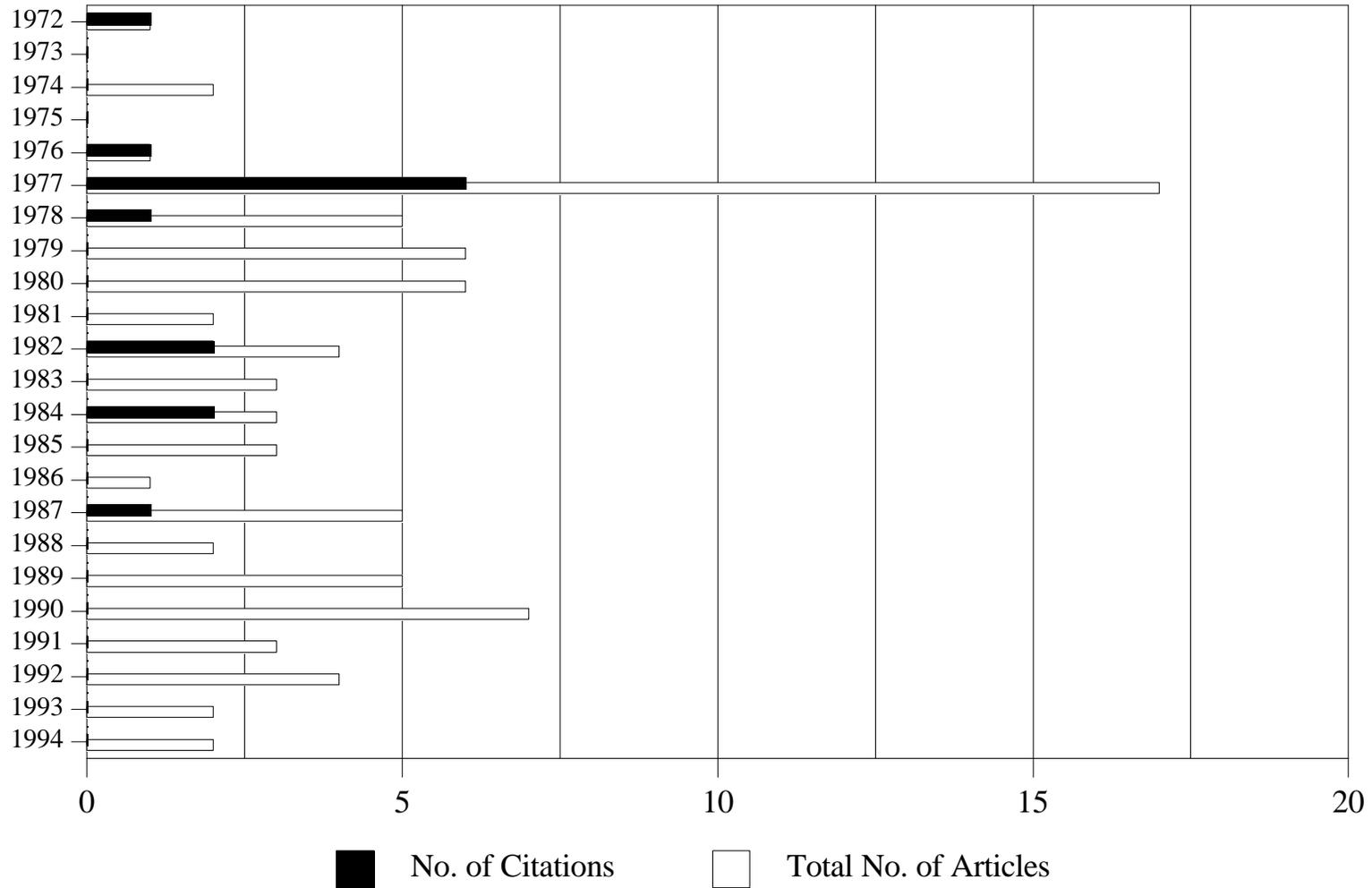
## *More Explicit Significance Criteria*



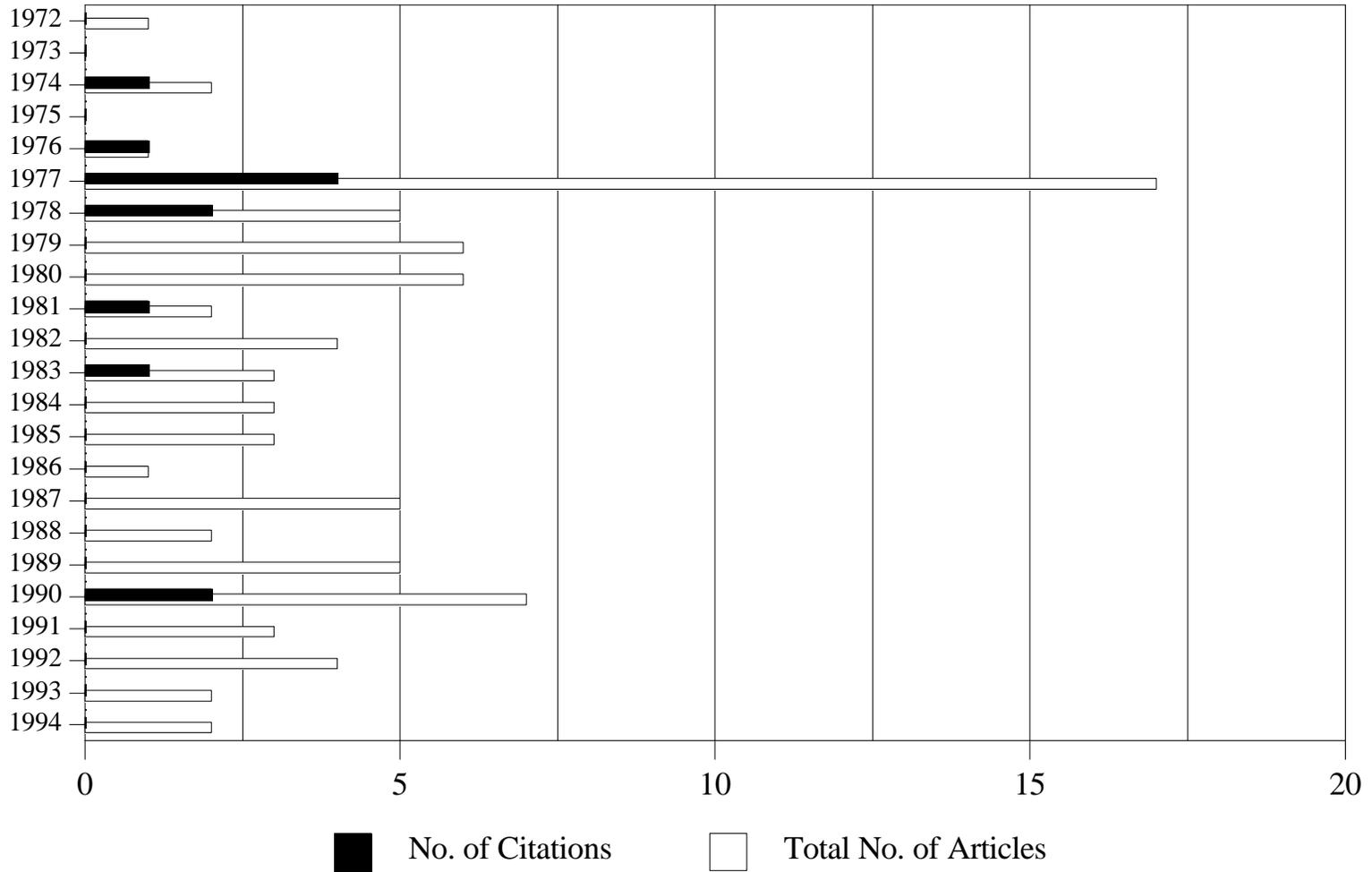
## *Innovative Approaches*



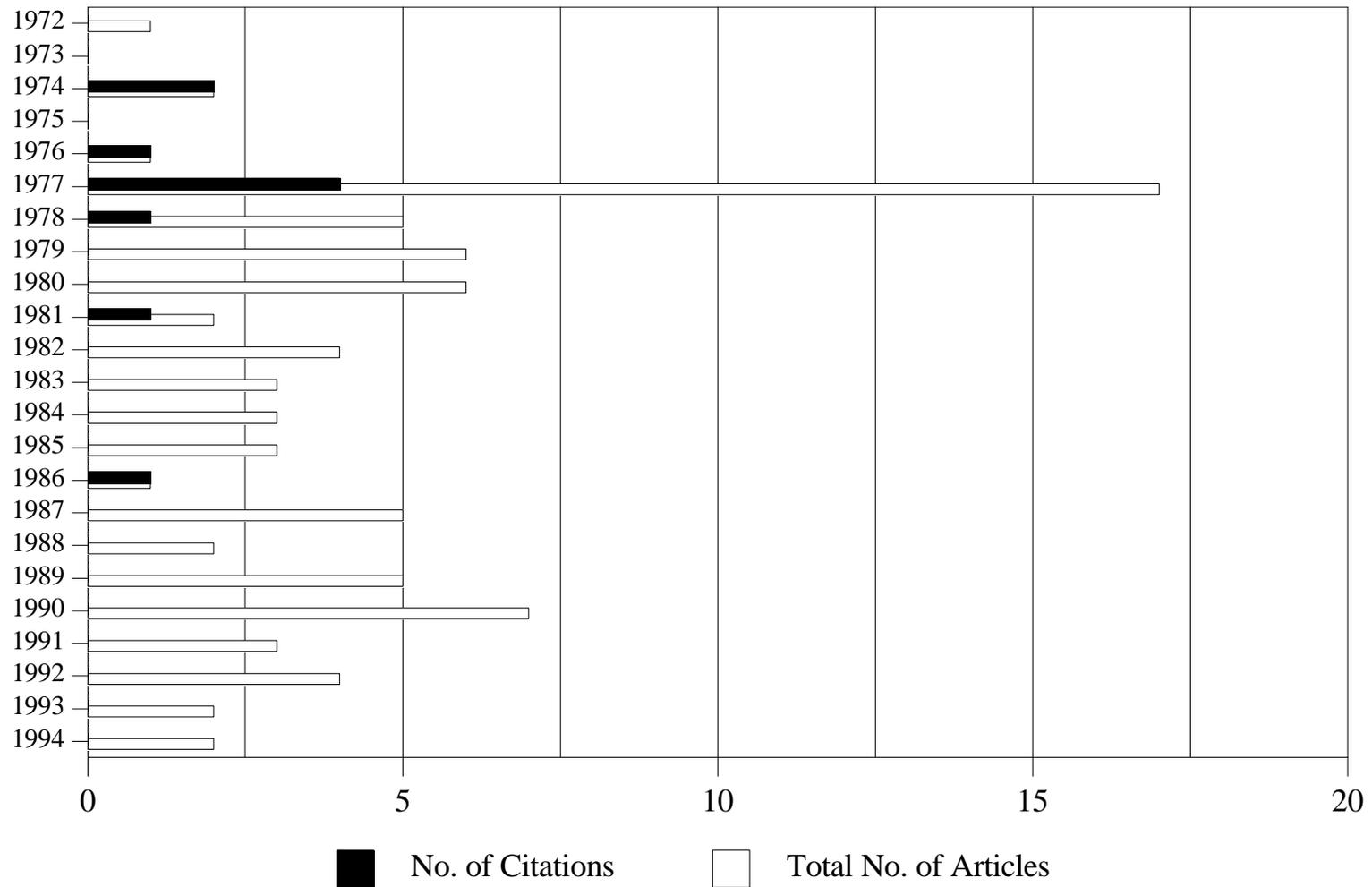
## *General Significance Categories*



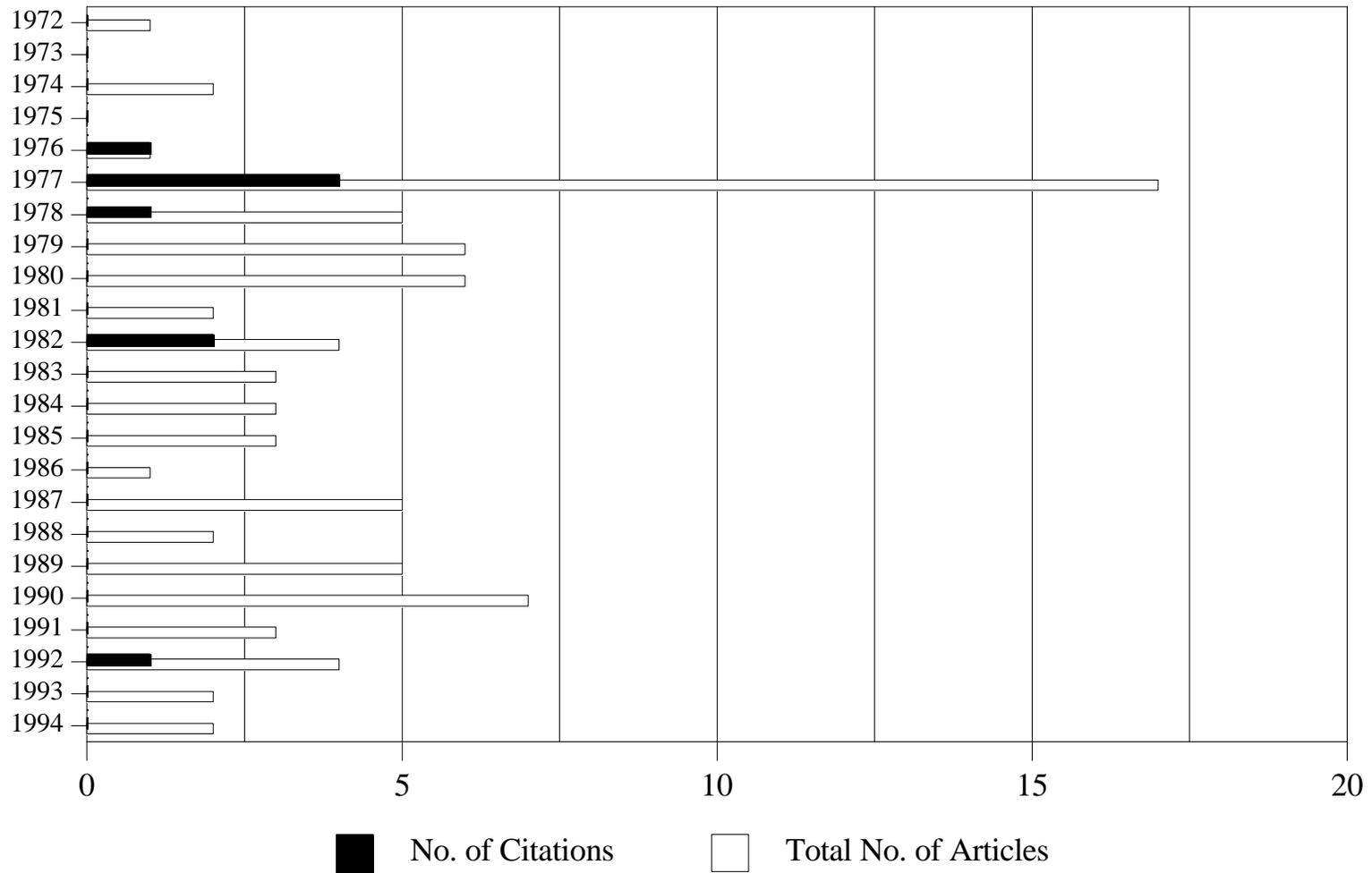
# *Interdisciplinary Approaches*



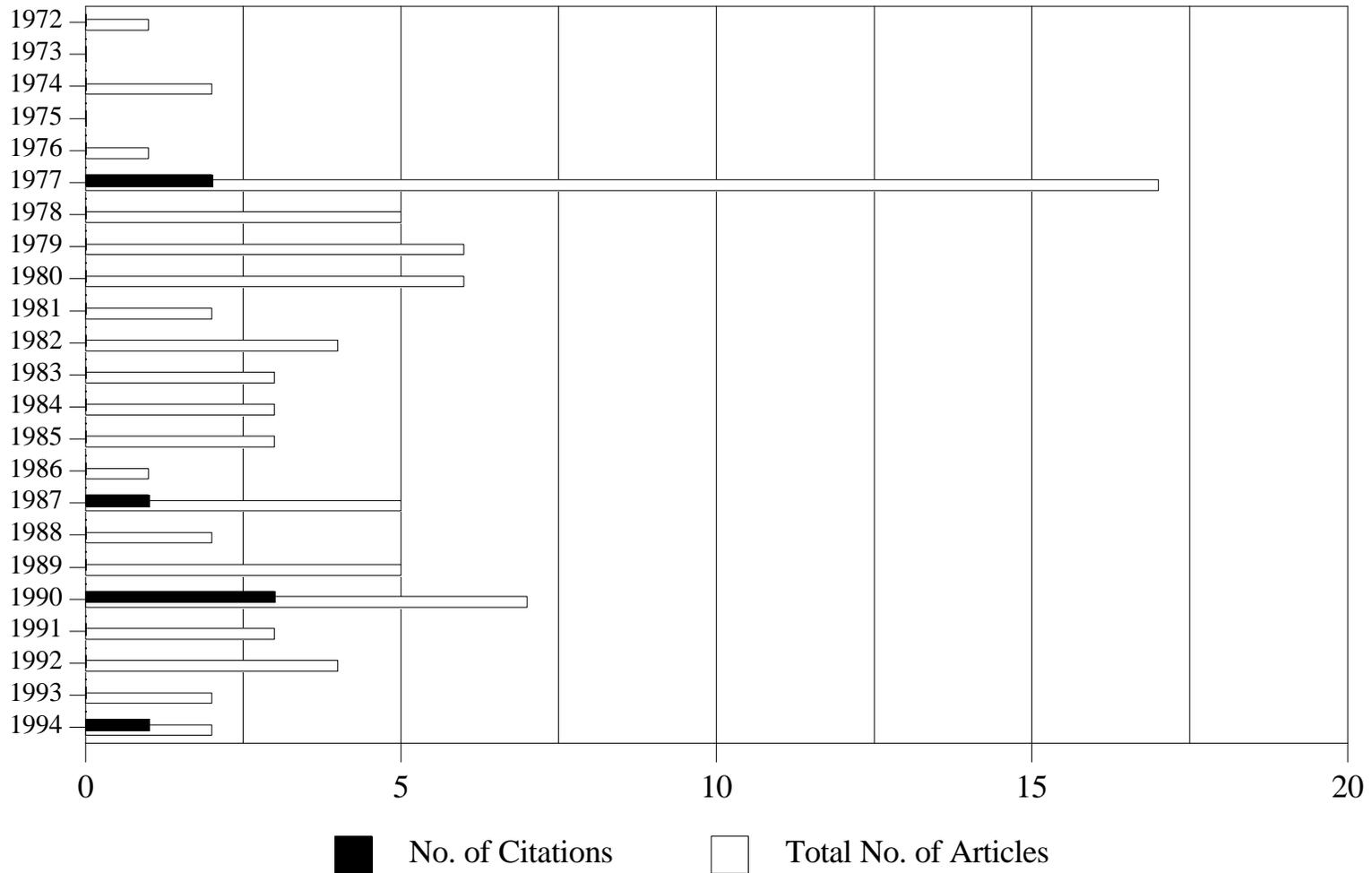
## *Public Education/Involvement and CRM*



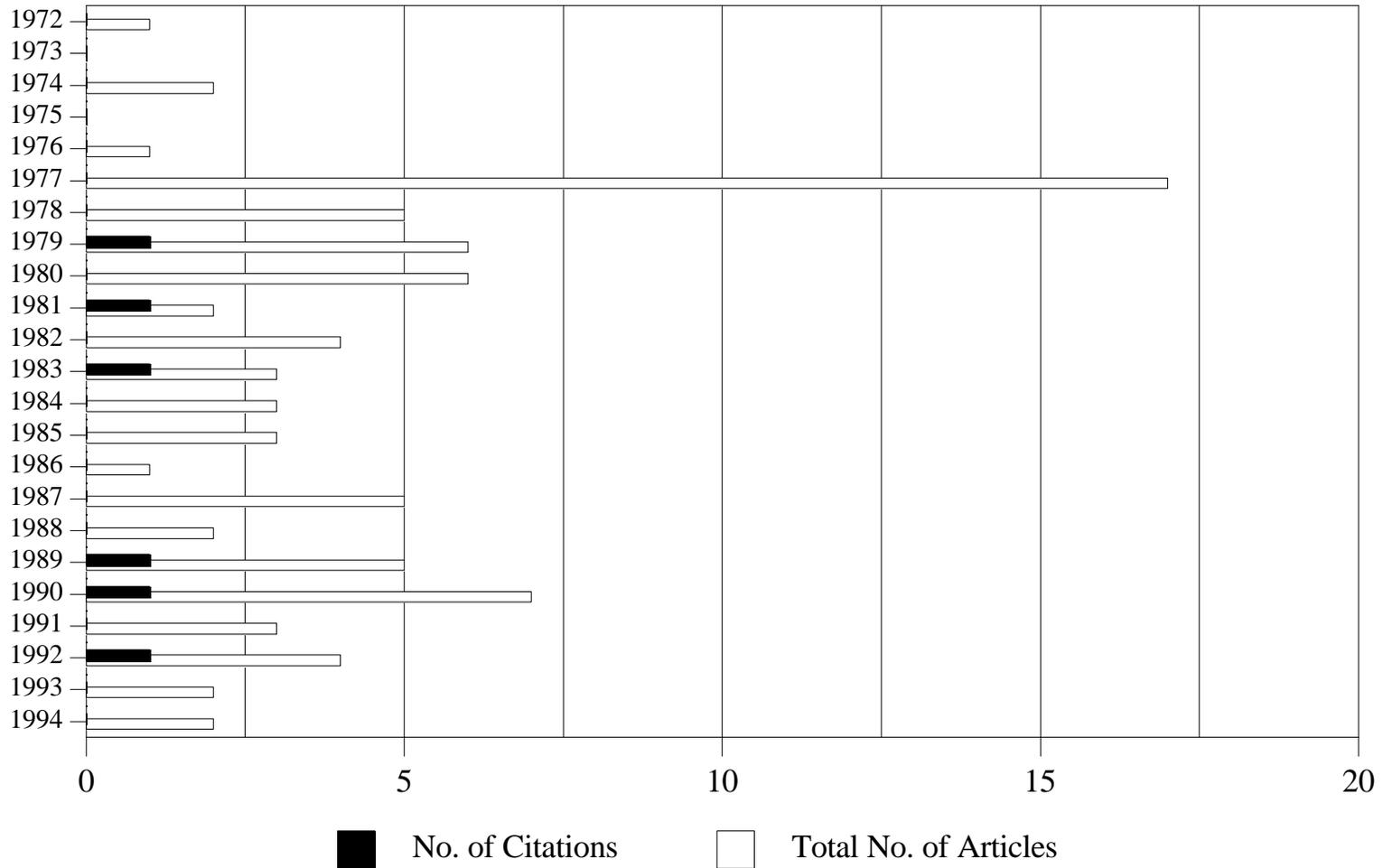
# *Ethnic Significance*



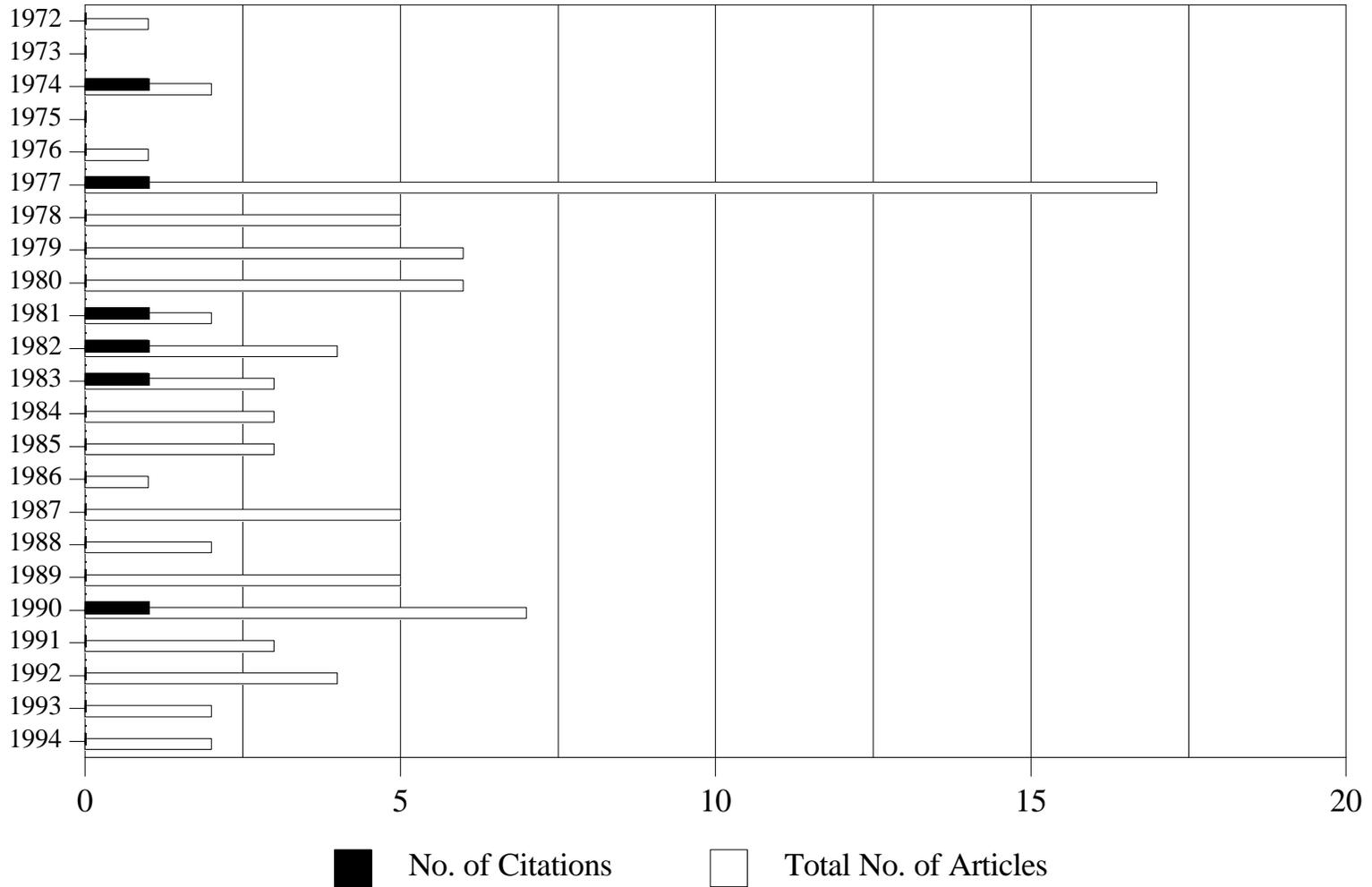
## *Cultural Resource Redundancy*



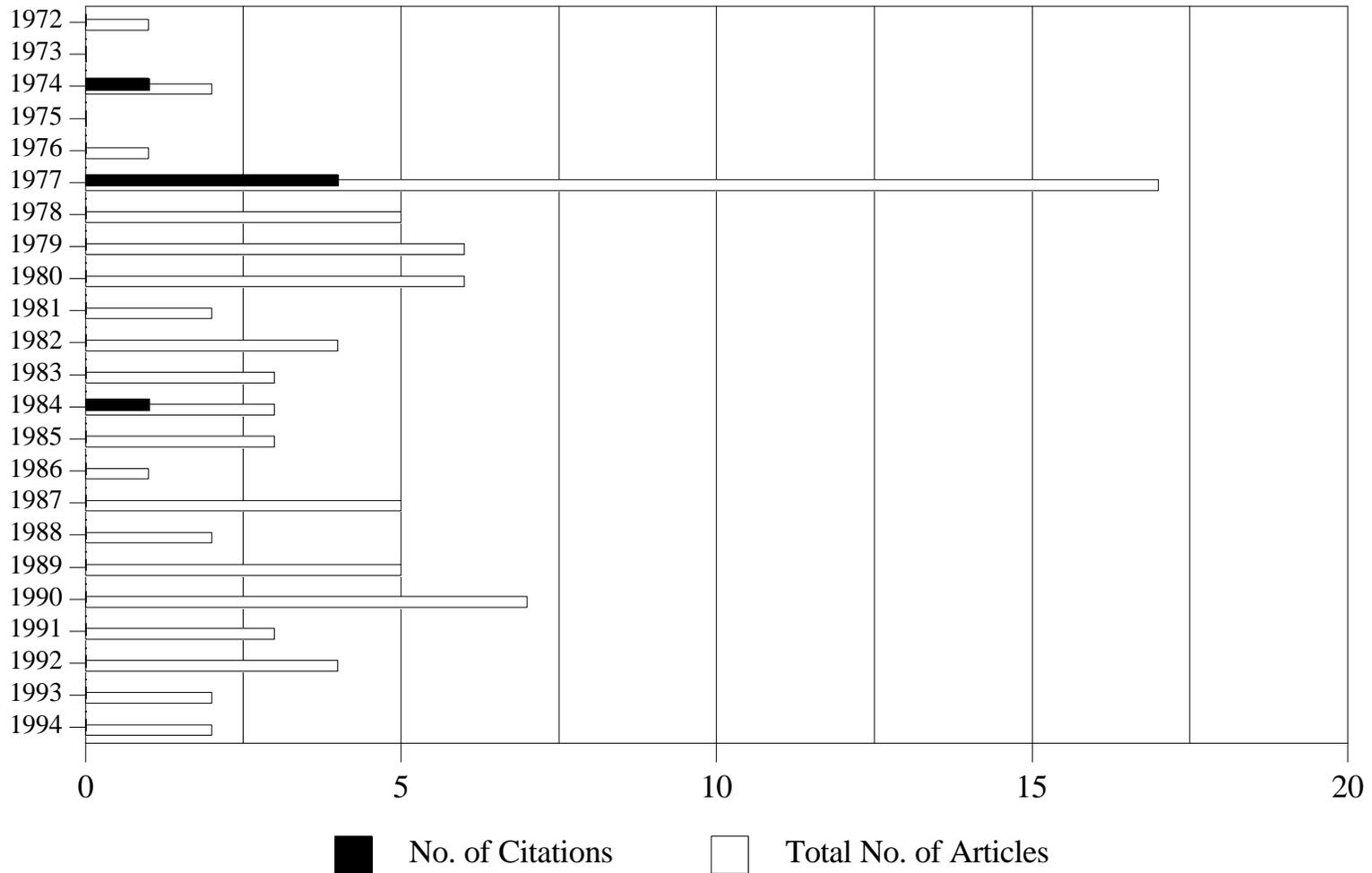
## *Significance vs. Non-Significance*



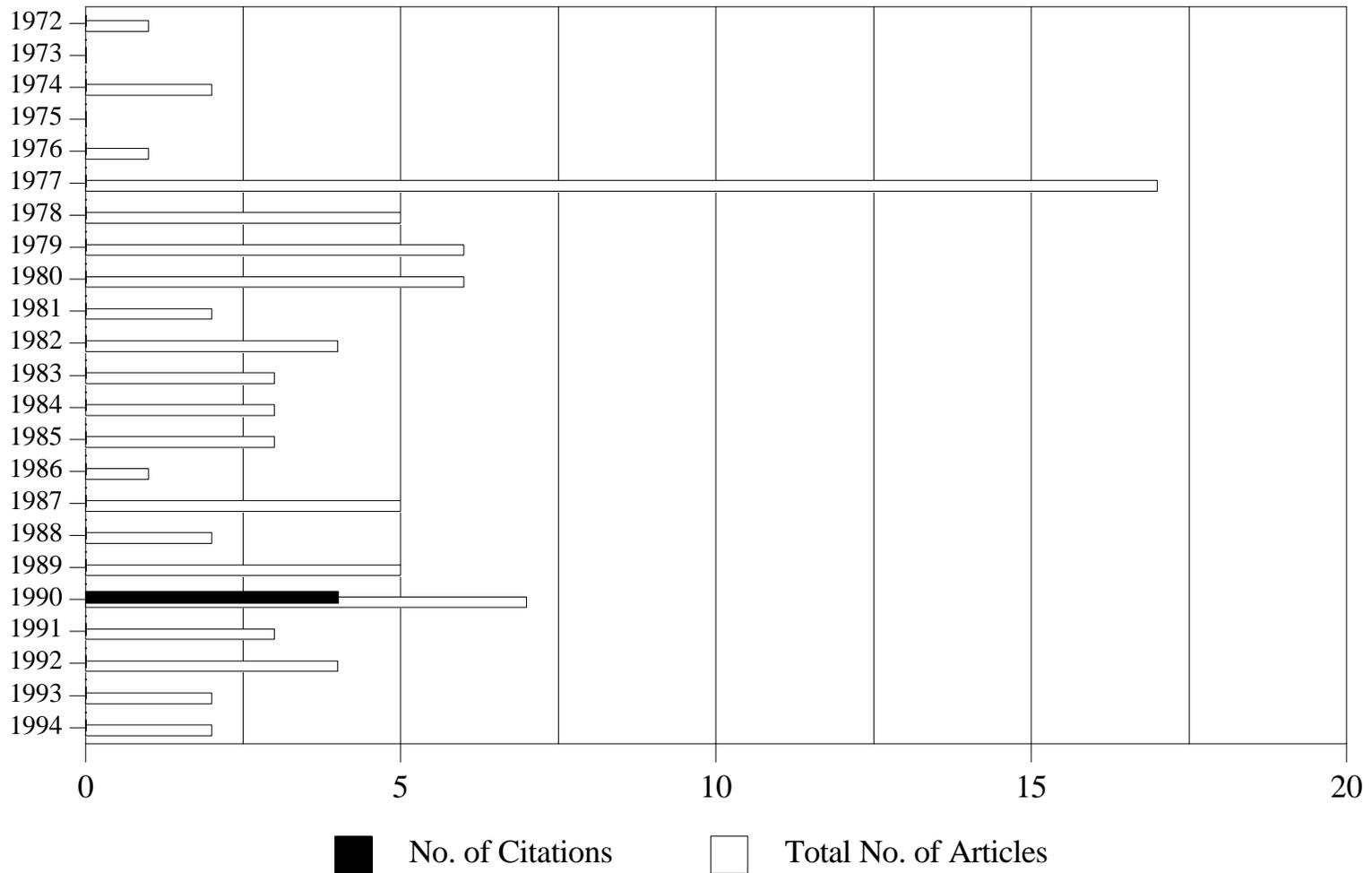
# *Archaeological Preserves*



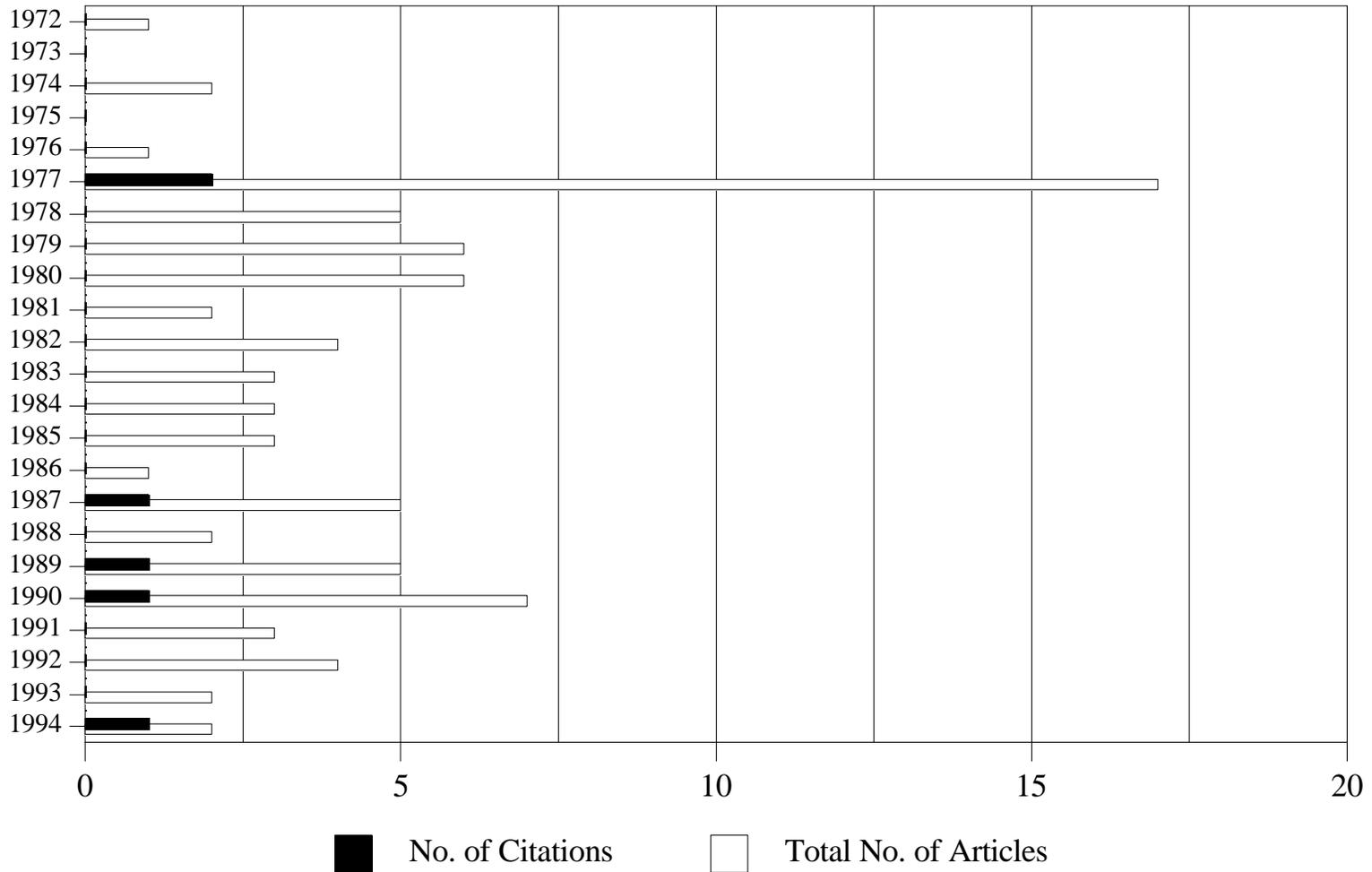
## *Is CRM Research or Not?*



# *Applied Holistic Evaluations*



## *Multi-Phase Field Investigations*



# **Appendix D**

## **Alphabetical Listing of Authors**

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**Note:** During a format conversion, the Significance Bibliography Numbers (SBN) were omitted from Appendix D. Below is an SBN numbers-to-page numbers conversion list keyed to the “Alphabetical Listing of Authors Included in the Significance Bibliography.”

16 - E-a24	77 - E-a93	26 - E-a35	82 - E-a99
58 - E-a72	65 - E-a81	55 - E-a67	37 - E-a47
79 - E-a96	8 - E-a12	67 - E-a83	51 - E-a63
33 - E-a43	9 - E-a13	81 - E-a98	74 - E-a90
64 - E-a79	23 - E-a31	83 - E-a101	38 - E-a48
53 - E-a65	24 - E-a32	39 - E-a49	21 - E-a29
41 - E-a52	50 - E-a62	11 - E-a16	63 - E-a77
27 - E-a37	34 - E-a44	30 - E-a40	70 - E-a86
22 - E-a30	60 - E-a74	20 - E-a28	71 - E-a87
75 - E-a91	44 - E-a55	56 - E-a69	
76 - E-a92	72 - E-a88	62 - E-a76	
49 - E-a61	78 - E-a94	12 - E-a17	
5 - E-a8	2 - E-a3	13 - E-a18	
42 - E-a53	25 - E-a33	14 - E-a20	
46 - E-a58	47 - E-a59	15 - E-a23	
17 - E-a25	48 - E-a60	68 - E-a84	
35 - E-a45	36 - E-a46	1 - E-a1	
6 - E-a10	54 - E-a66	29 - E-a39	
18 - E-a26	19 - E-a27	31 - E-a41	
7 - E-a11	66 - E-a82	69 - E-a85	
43 - E-a54	28 - E-a38	40 - E-a51	
59 - E-a73	61 - E-a75	32 - E-a42	
	73 - E-a89	57 - E-a70	
	10 - E-a14	45 - E-a56	
	52 - E-a64	3 - E-a5	
	4 - E-a6	80 - E-a97	

**ALPHABETICAL LISTING OF AUTHORS**  
**INCLUDED IN THE SIGNIFICANCE BIBLIOGRAPHY**

<i>SBN</i>	<i>AUTHOR(S)</i>	<i>YEAR</i>
16	<i>ADAMS</i>	1977
58	<i>ADVISORY COUNCIL ON HISTORIC PRESERVATION</i>	1988
79	<i>ADVISORY COUNCIL ON HISTORIC PRESERVATION</i>	1993
33	<i>BARNES ET AL.</i>	1980
64	<i>BRIUER ET AL.</i>	1990
53	<i>BUTLER</i>	1987
41	<i>CLEELAND AND DOYEL</i>	1982
27	<i>COASTAL ENVIRONMENTS, INC.</i>	1979
22	<i>CRIMMINS</i>	1978
75	<i>DELGADO</i>	1992
76	<i>DELGADO AND FOSTER</i>	1992
49	<i>DERRY ET AL.</i>	1985
5	<i>DIXON</i>	1977
42	<i>DOYEL</i>	1982
46	<i>DUNNELL</i>	1984
17	<i>EGLOFF</i>	1977
35	<i>FISHER</i>	1980
6	<i>GLASSOW</i>	1977A
18	<i>GLASSOW</i>	1977B
7	<i>GRADY</i>	1977
43	<i>GREEN</i>	1983
59	<i>GRUMET</i>	1988

<b>SBN</b>	<b><i>AUTHOR(S)</i></b>	<b>YEAR</b>
77	<i>GRUMET</i>	1992
65	<i>HARDESTY</i>	1990
8	<i>HICKMAN</i>	1977
9	<i>KING ET AL.</i>	1977
23	<i>KING</i>	1978
24	<i>KING AND LYNEIS</i>	1978
50	<i>KING</i>	1985
34	<i>KLINGER AND RAAB</i>	1980
60	<i>KNOERL ET AL.</i>	1989
44	<i>LEBLANC</i>	1983
72	<i>LEE AND MCCLELLAND</i>	1991
78	<i>LEONE AND POTTER</i>	1992
2	<i>LIPE</i>	1974
25	<i>LIPE</i>	1978
47	<i>LIPE</i>	1984A
48	<i>LIPE</i>	1984B
36	<i>LYNOTT</i>	1980
54	<i>MACDOUGAL AND BRITO</i>	1987
19	<i>MCMANAMON</i>	1977
66	<i>MCMANAMON</i>	1990
28	<i>MATHIS</i>	1979
61	<i>MCCLELLAND ET AL.</i>	1989
73	<i>MCCLELLAND</i>	1991
10	<i>MCMILLAN ET AL.</i>	1977
52	<i>MEIGHAN</i>	1986
4	<i>MORATTO AND KELLY</i>	1976

<b>SBN</b>	<b><i>AUTHOR(S)</i></b>	<b>YEAR</b>
26	<i>MORATTO AND KELLY</i>	1978
55	<i>NOBLE</i>	1987
67	<i>PARKER AND KING</i>	1990
81	<i>PEACOCK</i>	1994
83	<i>PERRY</i>	N.D.
39	<i>PLOG</i>	1981
11	<i>RAAB AND KLINGER</i>	1977
30	<i>RAAB AND KLINGER</i>	1979
20	<i>RAFFINO</i>	1977
56	<i>REED</i>	1987
62	<i>SCHAAFSMA</i>	1989
12	<i>SCHIFFER AND GUMERMAN</i>	1977A
13	<i>SCHIFFER AND GUMERMAN</i>	1977B
14	<i>SCHIFFER AND HOUSE</i>	1977A
15	<i>SCHIFFER AND HOUSE</i>	1977B
68	<i>SCOTT</i>	1990
1	<i>SCOVILL ET AL.</i>	1972
29	<i>SHARROCK AND GRAYSON</i>	1979
31	<i>SHERFY AND LUCE</i>	1979
69	<i>SMITH</i>	1990
40	<i>STUART AND GAUTHIER</i>	1981
32	<i>TAINTER</i>	1979
57	<i>TAINTER</i>	1987
45	<i>TAINTER AND LUCAS</i>	1983
3	<i>THOMPSON</i>	1974
80	<i>TOWNSEND ET AL.</i>	1993

<b>SBN</b>	<b><i>AUTHOR(S)</i></b>	<b>YEAR</b>
82	<i>TRIERWEILER</i>	1994
37	<i>U.S. DEPARTMENT OF THE INTERIOR</i>	1980
51	<i>U.S. DEPARTMENT OF THE INTERIOR</i>	1985
74	<i>U.S. DEPARTMENT OF THE INTERIOR</i>	1991
38	<i>WENDORF</i>	1980
21	<i>WILDESEN</i>	1977
63	<i>WILLIAMS ET AL.</i>	1989
70	<i>WILLIAMS ET AL.</i>	1990
71	<i>WILSON</i>	1990

# Appendix E

## Annotated Bibliography

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Scovill, Douglas H., Garland J. Gordon, and Keith M. Anderson  
1972. *Guidelines for the Preparation of Statements of Environmental Impact on Archeological Resources*. Tucson: Arizona Archeological Center, National Park Service.

### Key Points

Means of evaluating significance:

- (a) Historical Significance: *"a typical or well-preserved example of a prehistoric culture, historic tribe, period of time, or category of human activity... a specific individual event or aspect of history"*
- (b) Scientific Significance: *"the potential for using cultural resources to establish reliable generalizations concerning past societies and cultures and driving explanations for the differences and similarities between them"*; should be based on a regional frame of reference and general research questions. Furthermore, evaluations of cultural remains should consider:
  - (1) *"the relative abundance of the resources to be affected"*
  - (2) *"the degree to which specific resources and situations are confined to the project area"*
  - (3) *"the cultural and environmental relationship of the archeology of the project or program area to the surrounding culture province or provinces"*
  - (4) *"the variety of evidence for human activities and their environmental surroundings that is contained in the project or program area"*
  - (5) *"the range of research topics to which the resources may contribute"*

(6) *"specific deficiencies in current knowledge that study of these resources may correct"*

(c) Social Values: *"direct and indirect ways by which society at large benefits from (sic) study and preservation of archeological resources,"* including:

(1) *"the acquisition of knowledge concerning man's past"*

(2) *"indirect benefits received by educational and research institutions and their communities"*

(3) *"the acquisition and preservation of objects and structures for public exhibit and enjoyment"*

(4) *"educational and economic benefits from tourism attracted by archeological exhibits"*

(5) *"practical applications of scientific findings acquired in archeological research" and*

(d) Monetary Values: *"the cost of total data recovery from the resources to be affected by the action"*

Lipe, William D.

1974. "A Conservation Model for American Archaeology." *The Kiva*. 39(3-4):213-245.

#### Key Points

1. Given the rapid erosion, and non-renewable nature, of cultural resources, archaeologists should slow the pace of intrusive fieldwork and try to leave as much as possible for future research
2. Salvage excavation should be a last resort, to be used only when all other protection measures have failed
3. Sites threatened with immediate danger/damage should always be the primary focus of archaeological attention; conversely, sites facing no imminent threats should be investigated only if data from them cannot be obtained from other (threatened) sources

#### Recommendations

1. Increase public education
2. Become more involved with the planning process
3. Establish "*archaeological preserves*," areas where land-alteration is "*prohibited or at least very rigidly controlled*," not chosen solely on archaeological grounds, but in conjunction with wilderness areas, etc.; thus, serve a number of resource needs and gain allies in the cause of conservation
4. Choose representative sample of space for preserves, rather than sites or areas chosen for contemporary significance: "*the principle of representativeness is [a] better one to use in setting up additional preserves than is the principle of significance*"
5. When sites must be salvaged, use following guidelines for excavation strategies:
  - (a) Establish a primary problem orientation for project
  - (b) Using well-designed sampling strategies, try to obtain representative samples of all data types; this ensures data will be of greater value to others
  - (c) Make use of intensive survey to get "*as large and as representative a body of information as possible within the limits of the time and money available*"

- (d) Place project in a "***regional framework***," extending fieldwork outside salvage area if necessary to establish wider cultural contexts(s)
- (e) Provide for indefinite storage of records and collections
- (f) Use "***direct site protection techniques***" such as burying when possible, as opposed to excavation
- (g) Maintain flexibility in salvage funding institutions by encouraging the use of different techniques and approaches, rather than employing one standardized formula everywhere, and
- (h) Archaeologists who work at sites not immediately threatened must provide "***a full and explicit theoretical justification for the proposed work...such justification should also present evidence that the research problem could not be adequately investigated as part of a salvage program***"

Thompson, Raymond H.

1974. "Institutional Responsibilities in Conservation Archaeology." In *Proceedings of the 1974 Cultural Resource Management Conference, Federal Center, Denver, Colorado*. William D. Lipe and Alexander J. Lindsay, Jr. (eds.). Flagstaff, Arizona: The Northern Arizona Society for Science and Art. pp. 13-24.

#### Key Points

1. With the advent of new Federal legislation requiring the evaluation of archaeological resources, archaeologists are now finding it necessary to assess the significance of resources on a regional level; this requires the cooperation of institutions within any given region in defining research goals for that region
2. ***"Poorly planned projects with no viable research design not only fail to produce substantive knowledge of any real significance, but also often fail to result in anything more lasting than an archaeological clearance statement"***

#### Recommendations

1. Archaeological assessments of significance must be done in a cooperative fashion on a regional scale (i.e., a large geographic area)
2. Innovative approaches need to be developed for evaluating significance, including regional databases and information management systems
3. Archaeologists need to have greater awareness of the public or social value of the archaeological record; this includes developing better ways of disseminating information in the form of published reports to the public

Moratto, Michael J. and Roger E. Kelly  
1976. "Significance in Archaeology." *The Kiva*. 42(2):193-202.

*{N.B.: This is an earlier version of SBN 26 (Moratto and Kelly 1978)}*

#### Key Points

1. Significance evaluations should be based on a number of different criteria, including not only scientific value, but also legal requirements, ethnic or symbolic importance, public opinion, and monetary value
2. Types of significance:
  - (a) Historical: a cultural resource that *"can be associated with a specific individual event or aspect of history"*
  - (b) Scientific: *"the potential for using cultural resources to establish reliable generalizations concerning past societies and cultures by deriving explanations for the differences and similarities among them"*
  - (c) Ethnic: *"a cultural resource that holds religious, mythological, spiritual, or other symbolic importance for a discrete group of people"*
  - (d) Public: *"those benefits that accrue to a society through the enlightened stewardship of its archaeological resources"*
  - (e) Geographic: pertains to sites that *"could be related to identifiable cultural patterns within a defined area"* (i.e., local, regional, or national significance)
  - (f) Monetary: *"estimating the potential economic worth of archaeological phenomena," and*
  - (g) Legal and Managerial: aspects of significance that *"are predicated on the regulatory statutes of Federal, state, and some local governments to which compliance is administratively required"*
3. Significance can be defined as *"any sites, specimens, or artifacts, including the records pertaining thereto, which may provide information regarding past cultures"* and that *"an archaeological entity may possess further special values for the general public, ethnic enclaves, or science and industry"*

## Recommendations

1. By judging a resource based on the multiple criteria listed above, planners and managers can try to determine the overall value of the resource and make better decisions concerning their preservation and/or expendability; should significance be based on anything less, then the loss of important resources to development will continue
2. Archaeologists need to consider other scientific disciplines, as well as archaeology, when evaluating significance
3. In addition to National Register criteria, archaeologists should make use of other landmark and inventory systems in order to assess significance

Dixon, Keith A.

1977. "Applications of Archaeological Resources: Broadening the Basis of Significance." In *Conservation Archaeology: A Guide for Cultural Resource Management Studies*. Michael B. Schiffer and George J. Gumerman (eds.). New York: Academic Press. pp. 277-290.

#### Key Points

1. Major opportunities exist to expand our bases for evaluating the significance of archaeological resources; i.e., by exploiting ***"the many ways archaeological sites and their contents are data banks that contain vital information for applied and theoretical disciplines other than archaeology"***
2. Discussion outlines five major points:
  - (a) All archaeological resources have potential significance unless proved otherwise
  - (b) Archaeologists are obligated to preserve and protect as many archaeological resources as feasible
  - (c) Sample of preserved resources should be as representative as possible
  - (d) Biases created by archaeological research problems and designs can diminish the quantity and representativeness of conserved resources, and
  - (e) Basis of significance evaluation can be expanded to increase support for cultural resource conservation
3. Archaeologists cannot anticipate future significance criteria and research needs. ***"Therefore, as scientists we realize that in the long view attempts to assign priorities by means of significance evaluation may be virtually meaningless"***
4. Nevertheless, reality is that conservation priorities are still determined by significance, so problem-oriented research and models are still necessary
5. ***"[A]ttempts to rank the research problems themselves in terms of scientific or other significance would not solve the problem. Thus, we are still concerned with the sites that are left over from the archaeological research designs, whatever they might be...The conflict is clear: as always, we are brought full circle by the need, ideally, to preserve all sites versus the prohibitive costs of doing so. As archaeologists, therefore, we are all interested in finding means to come as close to the goal as possible"***

## Recommendations

1. Research designs should aim to address *all* the sites in a region; ***"The goal of conservation archaeology is to conserve resources, not to solve limited research problems"***
2. ***"Therefore, it follows that the broader the bases of significance that the archaeologist can use, the more thorough and less biased the results are likely to be from the standpoint of resource conservation per se"***
3. Sensible to seek ***"other significance criteria in addition to those that are either standard operating procedure or specifically designed to serve the archaeologist's own research interest. The more good reasons for support, the more support there should be"***
4. To this end, it is important for archaeologists to maintain a broad knowledge of theoretical and methodological approaches, as well as reevaluate resources thought to be low priorities or not significant; latter may require a broadening of the significance concept to include other anthropological and humanistic values
5. Also, there is a need for archaeologists to be engaged in more ***"consistent, wide-ranging effort[s] to search out non-anthropological uses of archaeological data"*** [Various case studies outlined in this discussion provide examples of how such goals can (and have been) accomplished]
6. In this context, it is useful to bear in mind that: ***"The sites that contain important information for [other disciplines] are not necessarily the ones most valuable to the archaeologist"***

Glassow, Michael A.

1977a. "Issues in Evaluating the Significance of Archaeological Resources."  
*American Antiquity*. 42(3):413-420.

#### Key Points

1. According to guidance from the Advisory Council on Historic Preservation, sites must ***"have yielded, or may be likely to yield, information important in prehistory or history"***; this and other mandates force archaeologists to make decisions about the research values of archaeological sites when many potential research problems have not yet been conceived
2. Properties of archaeological resources lie in one or a combination of three dimensions: form, temporal locus, and spatial locus. In addition, there are several important properties of variation in archaeological resources:
  - (a) Variety: variations between discrete units of archaeological resources
  - (b) Quantity: the number of such resources in a given area
  - (c) Clarity: the degree to which archaeological resources may be isolated from their contexts; e.g., the physical distinctiveness of site components
  - (d) Integrity: the degree of preservation of archaeological resources; what kinds of data are intact and to what extent they are intact, and
  - (e) Environmental Context: the nature of the surroundings of the archaeological resources

#### Recommendations

1. Procedures for evaluation--a site should be viewed in relation to other sites in a region; archaeologists ***"must evaluate archaeological resources in terms of how they are used in archaeology as a whole to derive cultural information"***; evaluation must focus directly on the observational properties of resources
2. Categories of significance are similar to those established for artifact or settlement typologies; they may be approached through the quantitative analysis of site attributes

Grady, Mark A.

1977. "Significance Evaluation and the Orme Reservoir Project." In *Conservation Archaeology: A Guide for Cultural Resource Management Studies*. Michael B. Schiffer and George J. Gumerman (eds.). New York: Academic Press. pp. 259-267.

### Key Points

1. Since archaeological significance is not "***a static property inherent within archaeological resources,***" there is no universal set of criteria with which to evaluate it
2. Four general categories for considering archaeological significance:
  - (a) Historical: relating to specific cultures, periods, lifeways, and events found within the study area
  - (b) Scientific: broad set of values with the overall goal of producing general statements about cultural processes
  - (c) Social: refers to public benefits derived from the detailed study and conservation of potentially affected archaeological resource, and
  - (d) Monetary: expressed as the estimated costs of studying potentially impacted resources in a responsible fashion
3. Despite major problems in assessing monetary significance, it is possible to arrive at quantifiable estimates of the "***funding required to conduct data within a range of applicable research strategies***"

### Recommendations

1. "***Any decision made about managing cultural resources must take into account responsible estimates of the cost of that management activity***"
2. In the context of the author's study area, he suggests: "***The preserving, developing and managing for public use of a core of representative sites would not only be a provision for permanently protecting...sites against future disturbances but would at the same time provide an educational facility informing visitors of the history of the area***"
3. Management of cultural resources should include accurate and responsible evaluations of the effects of land alteration on indigenous groups

Hickman, Patricia Parker

1977. "Problems of Significance: Two Case Studies of Historical Sites." In *Conservation Archaeology: A Guide for Cultural Resource Management Studies*. Michael B. Schiffer and George J. Gumerman (eds.). New York: Academic Press. pp. 269-275.

#### Key Points

1. Historical records and anthropological concepts (e.g., network analysis and exchange theory) can be helpful in identifying socio-economic interactions and in establishing the cultural context of historic archaeological sites
2. The anthropological significance of historic properties depends on ***"their representativeness of historical patterns and on the ways in which they can be used to study those patterns"***
3. Concept of a social network was used to define two phenomena which proved to be useful in evaluating the national significance of one specific site:
  - (a) Events: i.e., behaviors linking occupants of a site to residents of other communities and more distant settlements, and
  - (b) Patterns: i.e., constellations of related interactions taking place during a particular period
4. Using these indices, it was possible to define various forms of cultural interaction for different periods; this information was then used to support a National Register significance nomination for one of the sites in the study

#### Recommendations

1. Important to preserve historic sites representative of all ethnic and occupational groups within an area, particularly those classes of sites that may be 'invisible' to the general public
2. These representative data (when collected for each major chronological period within a study area) could be used to assign significance ***"on the basis of a property's representativeness of a particular occupational pattern during a particular time period"***
3. The significance of individual archaeological resources should be evaluated by considering relationships among the entire sample of known sites

King, Thomas F., Patricia Parker Hickman, and Gary Berg  
1977. *Anthropology in Historic Preservation: Caring for Culture's Clutter*.  
New York: Academic Press.

#### Key Points

1. National Register criteria establish that a cultural resource is significant if it is "***significant in American history, architecture, archeology, and culture [National Historic Preservation Act Sec. 101(a)(1)]***"
2. Archeological and Historic Preservation Act (Moss-Bennett) criteria establish that an archaeological resource is significant if it has "***significant scientific, prehistoric, historic or archeological data [AHPA Sec. 3(a), 3(b)]***"
3. Research value can be interpreted as meaning "***what sort of scientific contributions can this resource make to our overall understanding of human history?***"
  - (a) Integrity (or what particular information can this resource offer, and is this information intact?)
    - (1) What specific research topics can be addressed here?, and
    - (2) Does this property exhibit attributes that suggest a need to preserve it against the time when new topics will be formulated?
  - (b) National level of significance includes, in general, the same level of significance as can be attached to humanity as a whole. If the data represented by a resource promise to advance the study of a general research topic held in common throughout the world, then the property may be said to have national significance
  - (c) State level of significance consists of resources of value to a contemporary political unit (a state). Such usage is uncomfortable because contemporary politics have little bearing on prehistory, and
  - (d) Local level of significance considers the importance of a resource to research in a particular area. Local level significance usually deals with specific research questions pertinent primarily to a restricted locality
4. Cultural value pertains to resources of value to a particular group for religious, traditional, symbolic (etc.) reasons

McMillan, Bruce, Mark Grady, and William Lipe

1977. "Cultural Resource Management." In *The Management of Archaeological Resources: The Airlie House Report*. Charles R. McGimsey III, and Hester A. Davis (eds.). Washington, D.C.: Society for American Archaeology. pp. 25-63.

#### Key Points

1. Most agencies (public and private) require in their contract specifications that resource significance be evaluated when possible
2. The fact that archaeological sites and the information they contain are our only clues to much of human life in the past makes every site potentially significant
3. Only when the topical, geographical, and temporal context is under control can relative significance of a site be estimated
4. It is incumbent upon archaeologists making statements about significance to specify the frame of reference used in making those evaluations
5. Because archaeology is a dynamically evolving discipline using a variety of approaches (in the context of an ever-changing set of needs), it is untenable to develop generally applicable or universal criteria for evaluating significance based on the potential of an archaeological or historic resource to produce information

#### Recommendations

*Significance should be considered under the following guidelines:*

1. Investigative Potential: evaluating archaeological resources against frames of reference that incorporate current archaeological theory, method, and technique
  - (a) A clearly thought out research design that sets forth such standards should be considered as an essential initial element of each project. This approach should enable decisions to be reached concerning the relative current significance of particular archaeological resources, and
  - (b) Since the discipline is constantly changing, sites not now considered significant could prove to be so in the future; in order not to prematurely eliminate these sites, it is important that a representative sample of the resource base be preserved for future reference

2. Integrity: i.e., the better preserved a resource is, the more likely it is to provide valuable data; however, it is important not to consider this element alone, since even heavily disturbed sites can offer important research opportunities, while well-preserved sites may provide little or no research potential
3. Public appreciation: because some sites have the potential for contributing to public understanding and appreciation of the past, consideration can be given to the potential for developing exhibits for providing information on especially dramatic or instructive changes in history and prehistory. Such appreciation inevitably leads to greater public support and involvement
4. Monetary evaluations: although not a valid indicator of the full significance of an archaeological resource, this attribute can provide a measurable "value" of the resource in terms of the potential for material goods; such an evaluation may be necessary in terms of CRM program implementations

Raab, L. Mark and Timothy C. Klinger

1977. "A Critical Appraisal of Significance in Contract Archaeology." *American Antiquity*. 42(4):629-634.

#### Key Points

1. Significance as measured by the National Register criteria is inadequate because there are too many archaeological sites to be considered, and the vague guidelines established are not applicable to a considerable number of these sites
2. Significance evaluations based on monetary values are flawed because there should be no relationship between the cost of data recovery and the value of the data to scientific, historic, or other kinds of research questions; monetary values should therefore not be used as the driving force for determining significance
3. Significance as measured by unique characteristics is inadequate because:
  - (a) Determining if a resource is significant because it is the "biggest," "largest," "earliest," or "best example of" its type tends to measure resources on a form of sliding scale; such determinations do little to provide useful criteria for relating cultural resources to coherent archaeological or management goals, and
  - (b) Uniqueness of a site gives no indication of the importance of the site to specific research questions related to the project area itself, or to research questions of interest to archaeologists generally

#### Recommendations

Significance as measured by explicit, problem-oriented research design is by far the *best* approach to assessing archaeological significance

- (a) Means of determining significance will change and evolve as advances take place in anthropological theory and archaeological method; none of the procedures listed above can provide guidance in this matter, and
- (b) Explicit, problem-oriented research designs have the potential to provide relatively precise criteria for assessing the significance of archaeological resources

Schiffer, Michael B. and George J. Gumerman

1977a. "Assessing Significance." In *Conservation Archaeology: A Guide for Cultural Resource Management Studies*. Michael B. Schiffer and George J. Gumerman (eds.). New York: Academic Press. pp. 239-247.

### Key Points

*Authors define several major types of significance:*

1. Scientific: a site or resource is scientifically significant when its further study may be expected to help answer current research questions; i.e., it has research potential
2. Historical: a site or resource is historically significant if it provides a typical or well-preserved example of a prehistoric culture, historic tribe, time period, or category of human activity, or if it can be associated with a specific individual event or aspect of history (or prehistory)
3. Ethnic: an archaeological resource has ethnic significance when it has religious, mythological, social, or other special importance for a discrete population
4. Public: archaeological sites have public significance when they are used to educate the public about the past and the ways it is studied; the use of research findings to enrich our present existence; the use of archaeological information by industry for practical applications; the use of objects, ruins, and stabilized or restored structures for public exhibit and enjoyment; and benefits to the local economy that result from tourism attracted by archaeological exhibits
5. Legal: archaeological resources have legal significance when they are in compliance with legal guidelines such as NHPA, Moss-Bennett, Executive Order 11593, etc.
6. Monetary: the estimated economic value of the resource in general; this concept is no longer considered a valid means of determining significance

Schiffer, Michael B. and George J. Gumerman  
1977b. "Forecasting Impacts." In *Conservation Archaeology: A Guide for Cultural Resource Management Studies*. Michael B. Schiffer and George J. Gumerman (eds.). New York: Academic Press. pp. 291-301.

#### Key Points

1. For many reasons, conservation archaeologists have failed to pay adequate attention to forecasting the impacts of proposed land modification activities
2. It is commonly assumed that any impacts in directly affected areas will lead to total site destruction and that elsewhere impacts will be minimal
3. ***"[H]owever, information about impacts is extremely important for management purposes, and this information must rest on a solid foundation; after all, responsible proposals for mitigation rest upon the reliable prediction of impacts. The greatest obstacle to the forecasting of impacts, beyond the conservation archaeologist's indifference to the problem, is the impoverished state of knowledge about the effects of various activities and processes on archaeological resources"***
4. It is important to distinguish between different types of impacts (though in practice such clear distinctions are difficult):
  - (a) Direct: resulting from the immediate physical consequences of a project plan, construction or use, and
  - (b) Indirect: impacts not directly related to a project's activities, but that would otherwise not take place
5. It is also useful to separate:
  - (a) Effects: i.e., processes connected directly or indirectly with a project having the *potential* to alter cultural resources, and
  - (b) Impacts: i.e., physical transformation of cultural resources by various events, activities, and processes
6. Impacts can be forecast accurately only when:
  - (a) ***"The effects of all activities that occur during a project's planning, construction and operating stages are delineated"***
  - (b) ***"The nature and significance of the archaeological resources are known for all affected areas"***, and
  - (c) ***"The relationships are understood between all expected effects and the archaeological resources"***

7. *"Some may suggest that we have set an unrealistically high standard for forecasting impacts that smacks of a concern with rigor and precision for its own sake. While we grant that many applications, perhaps most, will fall short of our standard, they may still be perfectly adequate when judged against the particular circumstances of a project and the state of knowledge concerning the relationships between effects and impacts. Even so, we prefer stressing the eventual achievement of reliable predictions, rather than enshrining hopelessly vague and indefensible statements - the present situation - as standard"*

8. To forecast the impacts of proposed projects adequately, information about the significance of cultural resources is required

9. *"Simply put, impacts vary with the significance of the resources...Clearly, there are two senses of significance that could be considered: potential and actual (Schiffer and House 1977). The concept of potential significance accommodates the uncomfortable fact that all resources are potentially significant because we do not know what questions may be asked of them in the future. Actual significance, of course, includes the presently determinable types of scientific (and other types) of significance..."*

10. Impacts cannot vary with potential significance, since the latter is so difficult to assess; *"The concept of potential significance can only leave one with a uniform assessment of significance that provides no guidance for making recommendations (other than to treat all sites as being equal)"*

11. *"[I]n the final analysis, adverse impacts to the archaeological resource base are not simply land disturbances or even modifications of cultural deposits; instead they are losses of values related to significance"*

12. There are few examples of archaeologists combining significance evaluations with the forecasting of impacts

Schiffer, Michael B. and John H. House

1977a. "An Approach to Assessing Scientific Significance." In *Conservation Archaeology: A Guide for Cultural Resource Management Studies*. Michael B. Schiffer and George J. Gumerman (eds.). New York: Academic Press. pp. 249-257.

#### Key Points

1. ***"Although few investigators realize it, the practice of archaeology has always involved a concept of significance. That only some regions are investigated, only some sites excavated, and only some classes of data recovered implies that criteria of significance are being employed. Seldom, however, are those criteria made explicit. The passage of the National Environmental Policy Act (NEPA) and other legislation affecting cultural resources necessitates that archaeologists now take a less causal approach to defining and assessing significance. Only by developing a consistent framework for evaluating the research potential of sites and areas will it become possible to formulate responsible management recommendations"***
2. Archaeological resources acquire scientific significance when ***"their systematic study may be expected to help resolve current research problems"***; in this context, evaluations of significance are related to ***timely*** and ***specific*** research questions
3. Although this definition provides a useful baseline for evaluating scientific significance, it provides little insight into the *process* of matching specific questions to specific resources. The difficulties inherent in this process constitute the central problem in CRM studies at all levels
4. 1960s 'New Archaeology' called for more explicit approaches to, and criteria for, evaluating significance which imply that ***"any site - if sufficiently coaxed with sophisticated analytic techniques - can reveal their secrets on any questions."*** However, these solutions are problematic, since they:
  - (a) Do not justify the choice of problem domain(s) in the first place and
  - (b) Imply that all sites have equal research potential - thereby denying any need, or basis, for evaluating relative significance
5. Four major types of scientific significance (and research questions) are defined as:
  - (a) Substantive Significance: i.e., ideographic questions, which orient the description and explanation of past events/ processes, and relate to particular times and places

(b) Anthropological Significance: concerned with the extent to which the study of specific resources might be expected to test general anthropological principles, particularly long-term cultural change and ecological adaptation

(c) Social Scientific Significance: related to anthropological significance, and concerned with nomothetic questions in a general social science context, and

(d) Technical/Methodological/Theoretical Significance: questions relating to aspects of archaeological inquiry ( i.e., technique, method, and theory)

7. ***"The tension zone in substantive research between the known and unknown in general archaeological theory, method and technique is the fertile ground for innovation"***

8. The danger is that, as CRM managers refine and measure research potential in various ways, impact/mitigation work will only deal with questions that have a high probability of being answered; the result will be ***"we shall certainly cut off great sources of intellectual variety and innovation as pedestrian and safe research proliferates"***

9. ***"While we do need to evaluate research potential and sometimes play it safe, we also need to take calculated risks for the vitality of archaeology. To the extent that we can predict research potential we should do so. But let us not forget that the true frontiers of knowledge in science are likely to lie considerably beyond current standards of what is feasible"***

10. Continued refinement of the significance concept via specific investigations will lead to better management of cultural resources, as well as advances in archaeological method and theory

## Recommendations

1. Begin significance assessments for an area with a list of outstanding research questions and priorities, framed within an explicit research design
2. Undertake investigations to determine applicability of specific research questions to the resources under consideration; maintain up-to-date regional research designs to enhance this process
3. To avoid the conclusion that *all* sites are significant, it is important to ***"assign relative priorities to research questions and, by extension, evaluate sites where these questions can be tackled"***

4. To achieve this goal, it is necessary to identify the range of research questions in the four domains outlined above (a-d) that can be addressed for all resource types in an area; *"Then, by considering where else these same questions may be answerable, one determines relative priorities and significance"*

Schiffer, Michael B. and John H. House

1977b. "Cultural Resource Management and Archaeological Research: The Cache Project." *Current Anthropology*. 18(1):43-68.

#### Key Points

1. Two "***dubious methodological assumptions***" concerning significance:
  - (a) An individual investigator has the expertise to assess the significance of a body of archaeological resources, and
  - (b) Knowledge of the size, depth, and culture-historical affiliation of sites is sufficient basis for assessments of significance
2. Management goals cannot be met without prior conduct of innovative, problem-oriented research
3. Resources are significant within a context; primary context is the framework of contemporary archaeological research
4. Archaeologists need to consider *potential* (i.e., future) significance; however, since this is seldom feasible in the field, decisions will usually be made based on *actual* (i.e., contemporary) significance
5. Other important contexts for significance evaluation include interpretive value, Native American concerns, etc.
6. "***Scientific significance is present when investigation of a resource can lead to solving substantive, technical, methodological, or theoretical problems***"
7. Significance concept changes as discipline evolves

#### Recommendations

1. Involve investigators with varied expertise in the assessment process
2. Problem-oriented research must be "***encouraged and demanded***" since it is "***an integral part of [contract] projects***"

Adams, E. Charles

1977. "Comment on Schiffer and House." *Current Anthropology*. 18(1):53.

Key Point

***"Significance involves more than the archaeological community and the educated public; it must be explained and demonstrated to the funding agency or agencies"***; this constraint may prove to be a major financial burden that could soon deplete the sources of funding for most archaeological research

Egloff, Brian J

1977. "Comment on Schiffer and House." *Current Anthropology*. 18(1):56.

#### Key Point

***"Research designs employed in projects contracted between government agencies should place archaeological research as but one of a number of approaches which can be exploited to develop a prehistory of the endangered area. Thus archaeology may be part of a larger impact study drawing upon research scientists with interests in the area, not only for post-excavation analysis, as is commonly done, but also for collaboration in planning and implementation of the project. In this respect, the primary determinants of the significance of a site may sometimes be ascribed by nonarchaeologists"***

#### Recommendations

1. The concept of significance should be understood in broader terms than simply ***"the context in which it is viewed"*** or ***"the framework of contemporary archaeological research"*** (as the primary context for evaluation), i.e., the position outlined by Schiffer and House
2. The significance of research, for example, could ***"in many cases be determined by factors external to particular disciplines"*** and involve the active enlistment of independent view points
3. ***"In some instances it may be essential for the archaeologist to cooperate with other scientists in that the necessary support structure may be considered too costly for a purely archaeological project and will only be provided for a team of researchers"***

Glassow, Michael A.

1977b. "Comment on Schiffer and House." *Current Anthropology*. 18(1):56.

#### Key Point

It is difficult to construct meaningful research designs in areas which are archaeologically poorly known

#### Recommendation

Archaeologists must consider potential significance, which could be evaluated by "*identifying the range of variation in... formal-spatial (and, indirectly, temporal) properties of sites*"; i.e., representative samples

McManamon, Francis P.

1977. "Comment on Schiffer and House." *Current Anthropology*. 18(1):58.

#### Key Point

Significance evaluations will have a major impact on which sites will be preserved or destroyed, thus limiting the availability of sites for future research

#### Recommendations

1. A site should not only be evaluated for its current research value, but also for its future research potential
2. ***"Archeological investigations during the planning stage should be designed to determine the archeological sensitivity of the various alternatives"*** that are under consideration by project managers and planners; furthermore, once decisions are made, ***"intensive archeological investigations of the impact areas should be undertaken to identify and assess the significance of sites within the area"***; decisions can then be made regarding ***"which significant sites can be preserved through avoidance, which will be unavoidably destroyed by the project, and what an adequate mitigation program will be"***
3. "Public sector" archaeologists need to acknowledge the following constraints and responsibilities:
  - (a) the ***"adequate identification of the range of sites within a project area, not merely those which interest the individual archeologist"***
  - (b) the ***"complete consideration of the research potential of each site, not merely their relevance to a single, favored research problem", and***
  - (c) the ***"explicit justification of the methodology and the adequacy of the investigations and analysis"***

Raffino, Rodolfo A.

1977. "Comment on Schiffer and House." *Current Anthropology*. 18(1):59-60.

#### Key Point

Significance must be defined in both a short and a long-term perspective,  
***"since no one can predict the direction of future research"***

#### Recommendations

1. ***"As far as the long-term significance of resources is concerned, the only solution. . . is to try to preserve, at all costs, the existing cultural resources that cannot be the object of immediate study"***
2. Archaeologists need to continue efforts to develop broader approaches to resource management ***"through a method capable of being adapted to the requirements of each individual region"***

Wildesen, Leslie E.

1977. "Response to Schiffer and House." *Current Anthropology*. 18(1):60-61.

#### Key Point

Sites with "***substantive research***" potential may be of little use to an agency, while sites with little substantive value can be significant, as they can be used for methodological studies; i.e., trying out new technical approaches without losing "substantive" information

Crimmins, Timothy J.

1978. "Planning for the Future with an Eye on the Past: the Value of Local Historical Resources." In *Cultural Resources: Planning and Management*. Roy S. Dickens, Jr. and Carole H. Hill (eds.). Boulder, Colorado: Westview Press. pp. 18-22.

#### Key Points

1. Historic sites with national and/or regional significance are usually sufficiently notable to establish their potential eligibility for the National Register, but sites of local significance rarely have such prominence; as a result, their significance is often overlooked in light of the impacts that would otherwise have to be mitigated
2. Historical research for sites of local significance is rarely done to the same degree as sites of regional and/or national significance. This results in the loss of many valuable resources

#### Recommendation

The history of a locale must be better understood before the destruction of resources takes place; such knowledge would not only be useful for projects underway, but also for any possible future undertakings; it is considerably easier to plan around significant resources if the significance of the resource is known before the project begins

King, Thomas F.

1978. "Allegories of Eligibility: The Determination of Eligibility Process and the Capacity for Thought Among Archaeologists." In *Cultural Resources: Planning and Management*. Roy S. Dickens, Jr. and Carole E. Hill (eds.). Boulder, Colorado: Westview Press. pp. 43-54.

#### Key Points

1. Simply put, sites that are deemed eligible for the National Register are judged worthy of consideration during federal agency planning; those sites which are viewed as ineligible receive no consideration and thus stand little chance of survival during project planning and management
2. Archaeologists often are unwilling or unable to explain to others their reasoning regarding their judgements of the eligibility of archaeological sites to the National Register; this problem is further compounded by the attitude many professional archaeologists hold of the eligibility determinations being bureaucratic exercises rather than legitimate archaeological considerations

#### Recommendation

Archaeologists need to define the object of their research, and they should clearly consider the significance of the site in question; these considerations should go beyond the personal interests of the archaeologist doing the work; they should also take into consideration the concerns of other archaeologists, the site's "intrinsic research value," and the interest of the general public

King, Thomas F. and Margaret M. Lyneis  
1978. "Preservation: A Developing Focus of American Archaeology." *American Anthropologist*. 80(4):873-893.

#### Key Points

1. Historic preservation and salvage archaeology have always worked on two related yet opposite concepts:
  - (a) Historic preservation has worked to preserve those resources which have been viewed as having significance in one form or another, and
  - (b) Salvage archaeology has worked on the premise that some resources must be destroyed in the name of progress and that such resources must be excavated to preserve the information they have to offer

In other words, historic preservation attempts to preserve the resource; salvage archaeology attempts to preserve the information inherent to the resource
2. Over the last few decades public laws have evolved to protect and/or preserve archaeological and historic resources from rampant and unregulated destruction; as a result, archaeologists were forced to become familiar with not only their own area of interest, but also with the broader spectrum of anthropological and archaeological theory and methodology, in order to handle their new position
3. Because sooner or later everything having to do with human groups can be considered to have some archaeological value, a concept of significance was needed to decide which resources should be protected and which could be let go; for the most part, these decisions should be based on the archaeologist's determination of the resource's research potential. However, it must be noted that significance is rarely inherent in a site; rather it is a reflection of the site's place in a regional and theoretical perspective
4. Responsible research requires the continued use and development of broad, regional anthropological theory; since archaeologists must be able to defend their preservation decisions, greater emphasis has been placed on defining archaeological and conservation methodologies
5. Overall, it is hoped that the broad expansion of theory and methodology into the realm of preservation will help preserve a representative sample of the archaeological resource; it is further hoped that such concepts are used responsibly in order to ensure that the data preserved will be of scientific use to archaeologists now and in the future

Lipe, William D.

1978. "Contracts, Bureaucrats, and Research: Some Emerging Problems of Conservation Archaeology in the United States." In *Archaeological Essays in Honor of Irving B. Rouse*. Robert C. Dunnell and Edwin S. Hall, Jr. (eds.). The Hague, Holland: Mouton. pp. 121-147.

### Key Points

1. 'Conservation archaeology' derives from the fact that archaeological resources are finite and not renewable, and these resources are highly susceptible to damage from the activities of both cultural and natural agencies; in order to protect at least a portion of these sites, certain steps must be taken to ensure their preservation through responsible management, active research programs, and good public relations
2. ***"If the field is to continue to evolve, it must have a reservoir of sites about which new questions can be asked and upon which new methodologies can be tested for as long as possible into the future"***
3. Problems in addressing these goals:
  - (a) Letting contracts control conservation work rather than grants or research funding, and
  - (b) Complex bureaucracy set up to meet the requirements of the Federal law
4. Research and management goals often work in competition with one another rather than together; furthermore, bureaucracies tend to want everything uniform, codified, centralized, and handled internally

### Recommendations

1. Develop explicit research designs for contract work to make these investigations apply to current research problems, in addition to meeting contract requirements
2. Well-trained archaeologists should have management responsibilities for any contract work being conducted by their state or Federal agency, and archaeologists should also be in top-level bureaucratic positions
3. Regional advisory boards should evaluate contract work and how contracts are awarded
4. Regional research priorities should be established
5. A system of professional licensing or certification of contractors should be established to ensure archaeological work is being undertaken in a responsible fashion

6. Publication of results should be a major goal of contract archaeology
7. Well-trained and ambitious students should be encouraged to work in contract archaeology
8. Contract work should be teamwork, with different aspects of responsibility (e.g., research design, logistics, administration, fieldwork, analysis, and publication) being handled in the most responsible and productive way possible
9. Contract archaeology should be promoted as research-oriented, and better trained programs for contract work should be established
10. Diversity in research goals and methodology should be encouraged, rather than having all work in the same region be conducted by the same contractor in the same way, since this limits the diversity of data being collected
11. Bureaucrats should be trained to understand, and be kept up to date with, current research trends
12. Bureaucratic policies should not be allowed to infringe or restrict the research interests of archaeologists; if they do, then the archaeologists should defend their research rights
13. Archaeologists need to understand and respect the bureaucrats' needs for specific management- and compliance-oriented information in order to meet their legal obligations; such information must be presented by archaeologists in a manner congruent with legally prescribed time limits

Moratto, Michael J. and Roger E. Kelly

1978. "Optimizing Strategies for Evaluating Archaeological Significance." In *Advances in Archaeological Method and Theory*, Vol. 1. Michael B. Schiffer (ed.). New York: Academic Press. pp. 1-30.

#### Key Points

1. Significance is essentially in the eye of the beholder; those involved in CRM often make decisions about what is saved or destroyed based on their own perceptions of significance and without understanding the real scope and value of this concept
2. *"In CRM, significance implies criteria or standards for evaluating properties as well as a resultant status"; it is derived from "professional interests (such as research values) or social concerns (for example, symbolic values), and it may entail both potential and realized qualities"*
3. *"...archaeological significance is both dynamic and relative"*
4. Sites may be judged significant in and of themselves, or may be judged significant in relation to a larger system
5. Types of significance:
  - (a) Historical: a cultural resource that *"can be associated with a specific individual event or aspect of history or. . . if it can provide information about cultural patterns during the historic era"*
  - (b) Scientific: *"involves the potential for using cultural resources to establish reliable facts and generalizations about the past"*
  - (c) Ethnic: *"a cultural resource that holds religious, mythological, spiritual, or other symbolic importance for a discrete group of people"*
  - (d) Public: *"those benefits that accrue to a society through the wise stewardship of its archaeological resources"*
  - (e) Legal: those Federal, state, and local laws and policies that *"convey a real legal status to cultural resources and. . . establish formal procedures for dealing with cultural resources in the administrative context", and*
  - (f) Monetary: *"estimating the potential economic worth of cultural resources"*

6. With regard to legal significance, the wide range of interpretations possible under the National Register of Historic Places (NRHP) is necessary and useful; *"the idea is not to legislate in precise terms what is significant"*
7. Archaeologists need to apply NRHP criteria more broadly (e.g., extending the concept of *"high artistic values"* to resources such as petroglyphs/pictographs)
8. Factors that do not necessarily imply significance:
  - (a) Personal interests
  - (b) Sensationalism: the biggest, oldest, rarest, etc.
  - (c) Age of site: ancient does not equate with significance, nor does recent equate with insignificance, and
  - (d) Familiarity: well-known sites are not necessarily more or less significant than little-known sites
9. Although a number of attempts have been made to develop systems for ranking sites in terms of levels of significance for CRM purposes, ranking goes against the principles of archaeology; since ranking signifies inherent importance, it is a concept that takes into account neither the diversity of cultural resources nor the dynamic and relative meanings of significance

#### Recommendations

1. Because of the variety of possible standards that can be applied, significance evaluations and efforts to prioritize cultural resources need to be based on explicit, and multiple, criteria
2. Significance evaluations require professional competence, adequate information (for both site-specific and regional-scale research designs), and often more interdisciplinary research efforts
3. Archaeologists should be involved not only in the process of determining significance, but also in the larger decision-making context where these evaluations are acted upon; authors advocate active (rather than reactive) role in both short- and long-term planning/policy making

Coastal Environments, Inc.

1979. *Environment and Settlement on the Southwestern Louisiana Prairies: A Cultural Resources Survey in the Bayou Mallet Watershed*. Performed under contract with Interagency Archeological Resources, Atlanta, for U.S. Soil Conservation Service.

#### Key Points

1. An archaeological site may be significant in one or more of the following:
  - (a) Prehistory: before advent of written records
  - (b) History: after advent of written records
  - (c) Agriculture: livestock domestication and horticultural practices
  - (d) Arts: creative fine arts or crafts, and
  - (e) Commerce: production or exchange of goods
2. Criteria for judging significance potential:
  - (a) Site Uniqueness
  - (b) Expected Yield: information potential
  - (c) Site Condition: site integrity
  - (d) State of Knowledge: will any new data be gained from the site?, and
  - (e) Endangered Status

With these criteria, sites can be evaluated on a scale of 1 (low) to 5 (high) and then placed in order of importance (sites scoring high are more important than those with low scores)

3. This approach offers several advantages:
  - (a) Each site receives equal consideration
  - (b) Sites needing further investigation are noted
  - (c) It creates significance criteria to establish priorities, and
  - (d) It can consider and integrate a diverse set of attributes for evaluation

Mathis, Mark A.

1979. "Statewide Archaeological Survey: Nature and Objectives." In *North Carolina Statewide Archaeological Survey: An Introduction and Application to Three Highway Projects in Hertford, Wilkes, and Ashe Counties*. North Carolina Archaeological Council Publication. No. 11, Thomas E. Scheitlin, Mark A. Mathis, Jerry L. Cross, Thomas H. Hargrove, John W. Clauser, Jr., Michael T. Southern, Dolores A. Hall, Linda H. Dinkerton, Dale W. Reavis, and Thomas D. Burke. pp. 4-38.

#### Key Points

1. When dealing with scientific significance, it is usually understood that almost every site has something to contribute to the archaeological record, but since not all sites can be preserved, it is necessary to develop a set of parameters for individual site significance evaluations; ***"how much and what kinds of information must an archaeological site contain in order to be significant?"***
2. The research design, when well-founded, offers the best set of valid standards for evaluating archaeological sites and establishing their relative significance; such research-based significance assessments must be developed on a project-by-project basis, taking into consideration the amount and nature of previous archaeological investigations and the condition of the overall resource base of the study area
3. The information derived from the analysis of sites within a particular project will be integrated with the information in the overall resource base; this will ensure that the information base is constantly developing and that valid and workable regional research designs can eventually be developed
4. Archaeologists must be careful to consider the significance of a site as objectively as possible, even if the site does not fit in within a particular research design
5. The archaeologist must also weigh as carefully as possible the balance between a site's significance and the impacts that such an assessment will have; i.e., how will a significance evaluation affect the project implementations, and is such an assessment really worth the long-term cost of preservation or excavation

Sharrock, Floyd W. and Donald K. Grayson  
1979. "'Significance' in Contract Archaeology." *American Antiquity*.  
44(2):327-328.

*{N.B.: Comments on SBN 11 (Raab and Klinger 1977)}*

#### Key Points

1. Significance for a problem-oriented research design is not broad enough from a Federal agency viewpoint; these agencies define significance as whether a site is or is not eligible for the National Register, which includes the *potential* for a site to address *future* research questions
2. ***"[T]hat a site cannot be shown to play a role in any current problem-oriented research design is not sufficient reason to conclude that the site is not, in fact, significant"***; concepts will change through time as the discipline evolves
3. ***"The burden of proof is on the federal agency to demonstrate that a site is neither significant nor potentially significant"*** if it is to be released for impact; this is difficult due to the dynamic nature of the significance concept, which varies ***"through space, time, and perhaps even investigators, and because it may be extremely difficult to demonstrate that any site lacks the potential of becoming significant"***

#### Recommendations

1. Use National Register criteria because it is sufficiently broad to allow for potential significance
2. Contemporary research problems are only *one* way to deem a site significant; they do not necessarily indicate that a site is *not* significant
3. Archaeologists have a greater obligation to show sites as insignificant rather than significant, since impact will occur if sites are regarded as not significant
4. Use the term "significant" to mean ***"a measure of value in a particular circumstance, such as in explicit, problem-oriented research designs,"*** and the phrase ***"sites do or do not meet National Register criteria' to indicate that sites do or do not have significance in the broader terms of the National Register criteria. The two usages of 'significance' are not necessarily synonymous"***

Raab, L. Mark and Timothy C. Klinger

1979. "A Reply to Sharrock and Grayson on Archaeological Significance."  
*American Antiquity*. 44(2):328-329.

*{N.B.: Comments on SBN 29 (Sharrock and Grayson 1979)}*

#### Key Points

1. Problem-oriented research is not *per se* a problem
2. Such research can be broadly designed; e.g., with settlement/ subsistence models
3. ***"Any attempt to specify a priori what might be of research value will, in fact, be based on current research values (cf. Glassow 1977)"***
4. ***"If a broad range of substantive, technical, theoretical, and/or methodological research questions are developed at both the project and the disciplinary levels, a wide spectrum of archaeological resources will be identified for preservation, perhaps even something approaching a broadly representative cross section of the archaeological resources of a region or project area"***
5. Future questions will be based on a continuum of scientific progress; thus, current research needs are relevant to potential significance by creation of ***"a strong and varied scientific foundation in contract research today that will become a worthwhile future archaeology"***

#### Recommendation

Problem-oriented research designs are the best way to assess significance

Sherfy, Marcella and W. Ray Luce

1979. *How to Evaluate and Nominate Potential National Register Properties That Have Achieved Significance Within the Last Fifty Years*. Summer 1979 (2). Washington, D.C.: U.S. Department of the Interior, Heritage Conservation and Recreation Service.

#### Key Points

1. This bulletin provides guidelines for evaluating and nominating properties that have obtained exceptional significance within the last 50 years
2. ***"Exceptional importance does not mean national significance. The degree of a property's historical significance should be measured within the realm of its use, impact, or influence, whether that be a community, a state, a region, or the country"***

Tainter, Joseph A.

1979. "The Mountainair Lithic Scatters: Settlement Patterns and Significance Evaluation of Low Density Surface Sites." *Journal of Field Archaeology*. 6:463-469.

#### Key Points

The vast majority of archaeological sites are small, shallow, and often isolated surface scatters; these sites are often automatically considered insignificant or are ignored altogether because:

- (a) They are fairly uninteresting when compared to larger, more permanent sites with an architectural component, and
- (b) It is difficult to see how these small sites fit into a larger cultural context

#### Recommendation

Such sites can prove to be significant if they are viewed in the context of cultural activity, functional lithic analysis, patterns of land use, and frameworks of settlement patterns, although analysis of such activities would usually be piecemeal

Barnes, Mark R., Alton K. Briggs, and Jerry J. Neilsen  
1980. "A Response to Raab and Klinger on Archaeological Site Significance."  
*American Antiquity*. 45(3):551-553.

*{N.B.: Comments on SBN 11 (Raab and Klinger 1977)}*

#### Key Points

1. National Register criteria are necessarily broad ***"so as to encompass the great diversity of archaeological sites already known to the archaeological profession, and cover situations which will arise in the future"***
2. The National Register ***"promotes the development of regional approaches to understanding archaeological site significance. . . it is an open-ended system which can be applied to changing developments and advancements in archaeology"***
3. The National Register, in combination with the State Historic Preservation Offices and Grants-in-Aid programs, provides for the preservation and interpretation of many important sites throughout the United States
4. The Register was not established to manage research, but to manage resources, so that investigations can be conducted in a way that will integrate research and preservation
5. ***"Archaeologists working on federal contracts do not determine significance for archaeological sites; rather they provide information and recommendations to federal agencies, State Historic Preservation Officers, and the Department of the Interior so that site significance may be determined"***
6. Listing on the National Register does not limit the type or amount of research that can be conducted on a site; it only restricts Federal activities that might impact the site; furthermore, listing does not limit research funding

Klinger, Timothy C. and L. Mark Raab

1980. "Archaeological Significance and the National Register: A Response to Barnes, Briggs and Neilsen." *American Antiquity*. 45(3):554-557.

*{N.B.: Comments on SBN 33 (Barnes et al. 1980)}*

#### Key Points

1. The National Register is potentially useful to both resource managers and archaeologists, but it is broad and lacking in archaeological substance; it has limited utility for determining significance without the ***"application of a large measure of archaeological activity"***
2. Sites found ineligible for the Register are also ineligible for the large amount of Federal research funding that is available; the Register has developed ***"into a mechanism managing not only the resources themselves, but also the research potentials of them as well"***
3. Contract archaeologists *do* make determinations of significance for archaeological sites that they are investigating; SHPOs and the Federal agencies either agree or disagree; these initial determinations will in most cases determine whether a site is placed on the Register

Fisher, Charles

1980. "Significance Evaluation of Low Density Surface Sites: Another View."  
*Journal of Field Archaeology*. 7:498-499.

*{NB: Letter in response to SBN 32 (Tainter 1979)}*

#### Key Point

Tainter's (1979) assertion that low-density sites are often labeled "scatters" or "localities" and thus are not considered under the National Register's criteria for "site" significance is erroneous; sites can be recommended as eligible under criterion (d) regardless of size or label; it is up to the researcher to make the case for significance

Lynott, Mark J.

1980. "The Dynamics of Significance: An Example from Central Texas."  
*American Antiquity*. 45(1):117-120.

#### Key Points

1. Significance categories are not mutually exclusive
2. ***"Significance is best evaluated against an explicit, problem-oriented research design, particularly a regional research design"***
3. Evaluation of significance criteria is a ***"dynamic process"*** that changes as the discipline evolves
4. The site (at the center of this discussion) was classified as insignificant in late 1940s, given the problem-oriented research emphasis of the day (i.e., culture history); it was later deemed to be eligible for the National Register due to preserved information relating to settlement-subsistence and site function; it is also one of the best preserved remaining rockshelters
5. ***"Increasing the level of archaeological funding expands the criteria of significance evaluation by expanding the scope of contemporary research concerns"***; i.e., the parameters for evaluating significance increase as larger amounts of money are made available, because increased funding enlarges the scope of research questions that can be addressed in any given area
6. As the discipline evolves, some of the sites currently seen as insignificant will become significant, particularly with the development of new techniques and research designs

U.S. Department of the Interior

1980. *Resource Protection Planning Process*. Heritage Conservation and Recreation Service Publication No. 50 (Preservation Planning Series). Washington, D.C.: U.S. Department of the Interior, Heritage Conservation and Recreation Service, Division of State Plans and Grants.

#### Key Points

1. The purpose of resource protection planning is *"to develop a comprehensive historic management process which identifies and organizes information about a State's historic, archeological, architectural, and cultural resources into a form and process readily usable for producing high reliability decisions, recommendations, and/or advice about the identification, evaluation, and protection of these resources"*
2. Making preservation decisions should be a part of all land use decisions, and there needs to be a standardized format to follow for making these decisions
3. Each State should be responsible for its own preservation programs, with the Federal government acting only in a supervisory role rather than as an active participant
4. Each State's resource protection planning strategy should attempt to define regional study areas within that State as well as identify important resources
5. Develop ideal situations for the use, conservation, and interpretation of resources; the planning strategies should attempt to assess the achievability of these ideals and develop plans that take into consideration the achievable ideals in the strategies for land use
6. These ideals, plans, and strategies should be reviewed and revised, if necessary, periodically as new information is obtained and new policies are developed

Wendorf, Fred (ed.)

1980. "The Fort Burgwin Report." Reprinted in *Journal of Field Archaeology*. 7:248-253.

#### Key Points

1. Proposals for modifying the significance concept (including sampling) suffer from problems such as:
  - (a) They presume that an understanding of the archaeological record and significance criteria is static
  - (b) "Checklist" approaches could not be consistently applied on a national scale, and
  - (c) Checklist approaches might well increase, rather than decrease, arguments about significance
2. "Significance" is tied to National Register criteria
3. Significance is a value judgement, not an inherent quality
4. The value system involved in any judgement reflects diverse research and preservation goals
5. Significance assessments change through time
6. Units of reference for significance determination should be state and region
7. Existing National Register criteria are satisfactory
8. Problems with efficiency and cost-effectiveness stem from problems other than those generated by current significance criteria

#### Recommendations

1. Incorporate professional judgements in planning process
2. Judgements must be clearly and objectively documented
3. Use state plan as reference for significance evaluations
4. Set significance priorities based on comparative framework (i.e., state plan)

Plog, Fred

1981. *Cultural Resources Overview, Little Colorado Area, Arizona*.  
Washington, D.C.: U.S. Government Printing Office.

### Key Points

1. One of the greatest problems concerning significance is how to define it adequately; since there is no one meaning, different observers can find a single site to have varying degrees of significance. Author is critical of the concept that a site's significance should be immediately obvious and that the real problem in assigning significance is the failure to undertake necessary valuative studies such as high-quality overviews and planning studies early in the planning process
2. Author expresses skepticism about using a checklist or scorecard approach because of the arbitrariness involved; he argues instead for developing sound regional plans based on quantitatively and qualitatively acceptable databases and a heavy emphasis on developing regional sampling strategies to establish representative samples for preservation purposes; this argument is illustrated with archaeological data from the Little Colorado area
3. This problem with meaning and lack of clarity is further accentuated by the fact that evaluators are faced with a wide range of obstacles, such as lack of information about a site or area to be evaluated, lack of communication between evaluators and outside knowledgeable parties (such as academia), and the bureaucracy of government agencies
4. The problems of significance lie not so much in the meanings of the term, but in how these meanings are used; attempts to define significance, develop more detailed criteria for significance, or even develop a non-expansive list of significant sites would all have detrimental effects on significance evaluations since they would put too many restrictions on evaluators

### Recommendations

1. Regional sampling (between 10 and 20 percent) is an excellent means of obtaining the bulk of potential data that sites have to offer; furthermore, it allows for the continued development and refinement of regional management plans as well as being more cost effective than more intensive surveys
2. To capitalize on these procedures, data uncovered must be applied to those research designs and models most appropriate to the planning process for a given area; in general these include:
  - (a) Natural Processes: such as erosion, etc., and their effects on the cultural environment

(b) Spatial Variation: including the types of sites and their frequencies throughout the region in question, and

(c) Temporal Variation: including the distribution of sites for various time periods

3. Review procedures should be established with representatives from all appropriate agencies to evaluate collectively the research proposals for any given region as a step toward better coordination and greater efficiency

4. Finally, the author provides an extended discussion of various interpretive and public awareness programs and suggestions that would clearly have an impact on significance evaluation from the perspective of the general public

Stuart, David E. and Rory P. Gauthier

1981. *Prehistoric New Mexico: Background for Survey*. Santa Fe: New Mexico Historic Preservation Bureau.

#### Key Points

1. Significance is based on:
  - (a) A site's or region's research possibilities, and
  - (b) The variability of sites from different time periods within an area and their applicability to research purposes
2. When the laws dealing with significance (i.e., the NHPA, the National Register, etc.) were developed, little or no concern was given to the exact meaning of "significance," particularly in an archaeological setting
3. In theory, all sites have something to offer researchers, and therefore all sites could be considered to have significance; however, in reality it would be impossible to protect or even manage all sites, so limitations on significance values must be established in order to reduce the number of sites to be administrated to a manageable level
4. Significance is relative; each person will have their own idea of what makes a particular site significant (or insignificant)
5. Significance can be judged in two ways: (1) Resource models (the number of site types), and (2) Research models (the nature of site types).
  - (a) Resource models are based on numbers and frequencies of sites classified by age and/or type, distribution, etc.
  - (b) Research models are based on how sites can answer or encourage investigation into particular research questions, and
  - (c) Both of these models are arbitrary; the first is based on physical implications and the second is based on theoretical implications. They can also be used to complement one another
6. These models can be employed to attempt to establish significance, provided that it is understood that significance is not a fixed concept. Assessments will always be in flux as the means of classifying site changes and research models continue to evolve

Cleeland, Teri and David E. Doyel

1982. "Ethnic, Religious, and Scientific Significance of NFPI Compartment 9 Sites." In *Archaeological Survey in the Forest Highlands of the Defiance Plateau and Chuska Mountains, Navajo Nation*. Navajo Nation Papers in Anthropology. No. 6. Laurance D. Linford and Teri Cleeland (eds.). Window Rock, Arizona. pp. 235-250.

#### Key Points

1. Because of the vague criteria established by the National Register, some archaeologists have found it necessary to further define types of significance:
  - (a) Historical: when a resource "*can contribute information about cultural patterns during the historic era*"
  - (b) Ethnic: when a resource is of "*religious, mythological, spiritual, or other symbolic importance for a discrete group of people*", and
  - (c) Scientific: when a resource can be used to "*establish reliable facts and generalizations about the past*"
2. While conducting an archaeological survey of an area slated for timber cutting, a Navajo Medicine Man was consulted to identify those sites which were considered sacred (ethnically significant) and should be protected; in addition, the Medicine Man pointed out sites which were not necessarily sacred but still economically important to the Navajo people and should therefore also be protected
3. Although many areas considered sacred or economically important to the Navajo can be considered significant under National Register criteria, others, such as burials, cannot; however, these areas are still considered sacred to the Navajo and therefore have ethnic significance and thereby warrant protection

#### Recommendation

Before determining the significance of a site or area, it is important to consult with those ethnic groups who may claim that particular sites within the area are sacred or important, since such factors must be considered in addition to scientific significance or National Register criteria

Doyel, David E.

1982. "Medicine Men, Ethnic Significance, and Cultural Resource Management." *American Antiquity*. 47(3):634-642.

#### Key Points

1. Ethnic significance, as it applies to "***an archaeological location which holds religious, mythological, or other spiritual significance for a discrete community of people,***" is an important aspect to be regarded in archaeology, but it has so far been minimalized or avoided altogether
2. Ethnic significance, like scientific significance, is in the eye of the beholder; when asking different medicine men about the importance of the same locations, different answers were often possible. Furthermore, different kinds of sites have various levels of ethnic importance, and often there are markedly different viewpoints *within* an ethnic group concerning the value of such locations
3. Ethnic significance does not necessarily mean "sacredness" or religious importance; some sites may be significant because of their economic value to an ethnic group
4. Ethnic significance and scientific significance may not always be congruent

#### Recommendations

1. Obtaining input regarding ethnic significance of sites should at best include a consensus of the ethnic group, which means not only consulting religious leaders, but also economic leaders and the population as a whole
2. Archaeologists must act as mediators between all parties, providing scientific as well as legal information to all concerned; furthermore, archaeologists are in an ideal position to train members of the ethnic groups in archaeology and the value of history, thereby better equipping them to participate in the decision-making process

Green, Thomas J.

1983. "Strategies for the Preservation of Archaeological Sites in Idaho." *Idaho Archaeologist*. 6(3):1-3.

#### Key Points

1. Outlines plans for conserving and preserving archaeological resources in Idaho
2. The concept of National Register Districts is promoted and guided by three principles "***...districts should contain large numbers of sites and a variety of different types of sites...the districts should be complementary...and placed in areas where there is a reasonable chance for their preservation***"
3. Since "***cultures and societies utilize large regions, archaeologists have to look beyond particular sites or settlements in order to describe the history and lifeways of any particular region***"
4. Examples are provided of National Register Districts established in the state; these examples emphasize the importance of striving for representativeness both in terms of archaeological and environmental variability
5. Author promotes the idea that the preservation of archaeological resources should be considered in the context of multiple resource management strategies [*This is a rare example of this type of strategy being advocated*]; the protectability of sites is also a critical consideration

#### Recommendations

1. A three-step approach to archaeological preservation is suggested:
  - (a) Define study units (e.g., major drainage basins)
  - (b) Prepare detailed overviews describing past research and assessing current knowledge; also identify specific research problems and appropriate proposals for solving these problems from a state-wide perspective, and
  - (c) Evaluate research goals in relation to current and anticipated impacts causing site destruction
2. A series of complementary plans covering many geographic areas and different theoretical/methodological perspectives is preferable to one master preservation plan
3. There should be no division between CRM and pure archaeological research

LeBlanc, Steven A.

1983. "On the Importance of the National Register of Historic Places." *American Antiquity*. 48(2):358-359.

#### Key Points

1. It is a misconception among many archaeologists that nominating sites to the National Register is not worth the effort because the paperwork is tedious and the protection is limited; therefore, archaeologists often do not nominate sites even when they believe they are significant
2. Nominating a site to the National Register has a number of important benefits:
  - (a) It emphasizes the importance of the site to other individuals/groups
  - (b) It provides limited protection from Federal government activities, since Federal agencies must assess their impacts on registered sites
  - (c) The nomination process often demonstrates to a private owner that the site is significant and that people do care about it, thus encouraging them to help maintain and protect it, and
  - (d) Sites on the National Register are eligible for matching grants-in-aid which provide funds for both protection and excavation

Tainter, Joseph A. and G. John Lucas

1983. "Epistemology of the Significance Concept." *American Antiquity*. 48(4):707-719.

#### Key Points

1. Initially, the concept of significance developed out of an interest in, and bias toward, preserving sites having historical associations and/or architectural merit; these concerns continue to be reflected in legislation, but provide an inadequate basis for determining "*scientific significance*" in archaeological contexts
2. Historic preservation laws are based on the inaccurate assumption that all cultural sites either have or do not have inherent significance; significance is not based on inherent values, but on the subjective appraisal of the viewer
3. Since significance is in the eye of the beholder, such values may change over time; what was significant in the past may or may not be significant now, and what is significant now may or may not remain so in the future
4. To fully ascertain a site's significance in theory, all knowledgeable persons of pertinent subjects should be consulted before any decisions are made; this process is in reality fairly unworkable, but to do any less risks that some important factor will be overlooked

#### Recommendations

1. Significance determinations and National Register nominations should be based on "*an exacting intellectual activity*" (research orientation)
2. Effort should be placed on a site's insignificance to force reviewers to evaluate more carefully what makes a site significant
3. Regional research designs (State or Regional Preservation Plans) are currently the most effective way for regulating significance evaluations provided that they:
  - (a) Are revised and updated frequently, and
  - (b) Consider that current theory and methodology will change, so plans must take into consideration these factors if they are to be effective
4. Sites not in immediate danger should be excluded from significance assessments because negative evaluations can lead to prematurely writing off the site

5. Question: Should the labeling of a site as "currently significant" mean that steps should be taken to avoid any impact on it? On the other hand, should sites found to be not currently significant be written off and destroyed without taking into consideration their future value?

Dunnell, Robert C.

1984. "The Ethics of Archaeological Significance Decisions." In *Ethics and Values in Archaeology*. Ernestene L. Green (ed.). New York: The Free Press. pp. 62-74.

#### Key Points

1. Conservation is the "*central component and legal rationale*" of CRM
2. Most archaeologists view significance judgements as preserving elements of the record for the future (i.e., a conservation ethic)
3. Two frames of reference for assessing significance (with considerable overlap):
  - (a) Humanistic: building on symbolic notions of "heritage"; public concern, and
  - (b) Scientific: preserving a source of information about past cultures; professional concern
4. Archaeologists are "custodians" of public interest, helping to conserve sites and data for all future studies
5. Humanistic judgements are based on identifying and documenting interested constituencies; they are general and subject to change
6. Scientific judgements involve no single approach that can meet all present and future needs; thus, selecting sites based on current research problems systematically biases the choice of elements to be preserved
7. CRM is *not* problem-oriented, since the sites investigated are not chosen for their research potential, but because they are in the way of development
8. If the intent of CRM laws is conservation of resources, then CRM-mandated excavation is "*a breach of public trust*" or even fraud

#### Recommendations

1. Preservation should be approached from a *sampling* perspective, using the area of proposed impact as the sampling universe; this ensures the preservation of non-biased, representative samples of all elements of the record
2. Use multi-stage sampling and, whenever possible, high-coverage, low-cost, non-destructive techniques (e.g., aerial photography, remote sensing)

Lipe, William D.

1984a. "Conservation for What?" In *American Society for Conservation Archaeology Proceedings 1984*. American Society for Conservation Archaeology. pp. 1-11.

#### Key Points

1. The value in archaeological remains is in their information potential concerning the past, as well as their associative and symbolic meaning
2. ***"Conservation archaeology is. . . a strategy for using limited means to get the most information value from a resource that is fragile, threatened, and non-renewable"***
3. Components of the conservation strategy:
  - (a) Application of the latest techniques in theory and methodology to the resource in question in a way that will exact the maximum benefit of data within the constraints of time and funding allowed
  - (b) Continued development of research designs and methodology so that archaeology's understanding of the past will continue to evolve, and
  - (c) Application of alternatives to excavation or salvage, such as preservation and protection, to ensure that future developments in theory and methodology can be applied to the greatest diversity of site types

#### Recommendations

1. In order to implement these components of the conservation strategy for cultural resource management purposes:
  - (a) ***"[T]he dependence of information value on a dynamic theoretical and methodological framework"*** needs to be fully taken into account; that is, the value of the potential data in a site is dependent on the theory and methodology currently available
  - (b) Mechanisms must be developed that will ***"systematically identify and reward productive innovations and outstanding work"***, and
  - (c) Mechanisms must be developed that will keep CRM standards up-to-date with the continued development of archaeological theory and methodology

Lipe, William D.

1984b. "Value and Meaning in Cultural Resources." In *Approaches to the Archaeological Heritage*. Henry Cleere (ed.). Cambridge: Cambridge University Press. pp. 1-11.

#### Key Points

1. In order for any cultural resource to have "value," it must maintain some relationship to its original context and be able to retain some information about that connection
2. Types of values:
  - (a) Associative/Symbolic: the perceived relation or bridge that a resource provides between the current population and a particular period in the past
  - (b) Informational: a resource's potential research value
  - (c) Aesthetic: the population sees a resource as being important for its physical or mental presence, and
  - (d) Economic: the monetary value that could be derived from the resource through its direct or indirect exploitation
3. The "values" that are assigned to cultural resources, including economic, aesthetic, associative/symbolic, and informational values, are determined by the interests and beliefs of the population making the decisions and that population's ability to carry out these decisions

Derry, Anne, H. Ward Jandl, Carol D. Shull, and Jan Thorman

1985. *Guidelines for Local Surveys: A Basis for Preservation Planning*. National Register Bulletin, Volume 24. Revised by Patricia L. Parker. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. This bulletin provides guidelines to local communities and organizations for undertaking surveys of historic resources
2. Evaluations of significance ***"should be based solely on the historic, architectural, archeological, and cultural values perceived in the properties involved, without consideration of the economic value of such properties or how they may be treated in planning"***

King, Thomas F.

1985. "If an Orange Falls in the Forest, is it Eligible?: A Comment on Tainter and Lucas." *American Antiquity*. 50(1):170-172.

{N.B.: Comments on SBN 45 (Tainter and Lucas 1983)}

#### Key Points

1. Many Federal agencies will not attempt to protect cultural resources unless they have been at least deemed eligible for the National Register, and, even then, some may try to avoid their obligations
2. To respond to this inactivity, many historic preservationists and resource managers have been forced to argue that resources have inherent significance; it was the only way to get the agencies to act, even though "*inherent significance*" is illogical
3. The National Register should be replaced with a less centralized, more flexible, more sophisticated institution, but this is unlikely in light of the bureaucracy in which it is entrenched

Savage, Beth L. (ed.)

1985. *Definition of National Register Boundaries for Archeological Properties*. National Register Bulletin, Volume 12. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. Part I defines recommended approaches to boundary delineations for archaeological properties as well as the proper level of documentation needed
2. Part II promotes the usefulness of several recommended approaches as applied to hypothetical site types
3. Part III provides site case studies with delineated boundaries typical of situations frequently encountered in preparing National Register nominations

Meighan, Clement W.

1986. *Archaeology for Money*. Calabasas, California: Wormwood Press.

#### Key Points

Assessing significance in contract archaeology essentially involves convincing the general public that there is value in the archaeological studies that are being conducted. The problems raised in the course of such efforts include:

- (a) In public archaeology, particularly in environmental impact studies, archaeologists assume there is significance in everything they do, but fail to communicate the significance and value of their work to the people who pay the bills
- (b) There is a general lack of understanding among the general populace of the value of committing major financial resources to the recovery of past cultural debris
- (c) Significance evaluations involve establishing criteria for essentially determining which resources will be preserved, which will be studied, and which will be sacrificed to the bulldozer
- (d) Determining significance is a value judgement on the part of the archaeologist making the decision, and they are subject to their own personal biases; what may be considered significant to one scholar may be considered unimportant or trivial to another, and
- (e) The true significance of a site can usually be determined only after extensive excavations are made. In this context, sites originally not considered important may be found, after their destruction, to have contained significant data after all; on the other hand, when a site protected for its research potential is excavated, it may produce very little data

Butler, William B.

1987. "Significance and Other Frustrations in the CRM Process." *American Antiquity*. 52(4):820-829.

#### Key Points

1. Cultural Resource Management involves complicated situations not only because management must be undertaken within Federal regulations and impacts, but because CRM is also linked with archaeological research; these problems are further compounded by the lack of understanding of precisely what CRM is
2. There are various reasons for not determining a resource's eligibility for the Register, especially if a site is in danger of imminent destruction; determinations should only be done where long-term preservation or careful scientific excavations can be secured
3. Archaeologists should know enough about the site to make a determination of significance; if they do not, they should not be doing it. Therefore, once a site is determined ineligible, there should be no further consideration
4. Research designs based on theoretical and substantive knowledge should be carefully formulated when conducting CRM processes and determining a resource's Register eligibility
5. Attempts at determining redundancy in sites and regions depend on the definitions of these meanings in the minds of the researchers; in other words, how much information is enough, and at what point will nothing new be learned?
6. Small-scale surface sites where information potential is limited but still possible, such as lithic scatters, can benefit from "de facto" mitigation, where everything useful is collected during the initial survey. There is now no longer any need for determining eligibility or significance. This sort of system could only work on small surface sites
7. Predictive modeling is a very useful tool, but it cannot work without constant field checking and modifications; hence, any predictive model should be flexible and amenable to change
8. Significance evaluation cannot be made with only an in situ review of the site; collections must be made for exacting analysis in the laboratory. These collections also exist for future research, something that could not be done if they were left onsite
9. Managers must have an understanding of the processes of CRM as well as of the field of archaeology; in CRM, one cannot adequately work without knowledge of both concepts

MacDougal, Bruce and Herbert Brito

1987. *How to Establish Boundaries for National Register Properties*. National Register Bulletin. Volume 21. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. This bulletin gives instructions for establishing boundaries for buildings, structures, and sites, based on the distribution of significant features, uses, historical associations, property lines, site integrity, topographic features, etc.

2. *"...predictions based on background research and comparison to other resources in similar settings should be drawn from accurate settlement pattern data and reliable hypotheses about human-environmental relationships. It is very dangerous to rely solely on data based on the distribution of known environmental features because we rarely have complete information on the full range of types of occupations nor do we have accurate information on the manner in which these data were collected"*

Noble, Vergil E.

1987. "A Problem of Preservation: Assessing Significance of Historic Cultural Resources in Illinois." In *Nineteenth Century Historic Archaeology in Illinois*. T.E. Emerson and C.L. Rohrbaugh (eds.). Illinois Cultural Resources Study 2. Springfield, Illinois: Illinois Historic Preservation Agency. pp. 33-43.

### Key Points

In Illinois, three alternative methods are used to evaluate the significance of historic sites:

(a) *State-Wide Plan for the Study of Historic Sites* creates five interpretative categories: environmental zone, temporal period, ethnic group migration, economic status, and site function. Within these, a series of categories and subdivisions are tallied and analyzed for each site, and a statistical calculation is undertaken of what is present. This is then incorporated into an expanding database for comparative analysis with other sites; however, this procedure reflects neither research importance, nor regional/ national perspectives since it is limited to the Illinois state boundary

(b) *Resource Protection Planning Process* (RP3) summarizes chronological data and important information about a given region as well as pointing out those areas with incomplete data. This format can help direct research efforts into those areas in greatest need of study and suggest which site types could be most significant for specific types of research. However, there is a certain rigidity in the RP3 criteria that does not allow for the continuing evolution of research interests and techniques, and

(c) Third approach consists of a system that establishes a point scale for historic sites based on the presence/absence of certain key attributes (e.g., dealing with broad research topics such as "*ethnicity and acculturation, ecological adaptations, and reconstruction of past lifeways*"); points are also assigned if good historic documentation is available for sites once occupied by specific ethnic groups and for sites with potentially significant architecture. However, the number of points assigned to various factors is arbitrary and based on the bias/ knowledge/ experience of the individual(s) involved, so there may be disagreement about the results derived from this scheme. While a point system may help rank sites in some order of importance, it is difficult to draw an absolute distinction between significant and insignificant sites using this ranking procedure

## Recommendations

1. Rather than trying to develop formal significance criteria, it would be more beneficial if investigators were well trained and had a detailed understanding of the importance of significance evaluations; *"any site should be considered significant if someone is interested in what it has to offer and can reasonably demonstrate that something new can be learned from its investigation"*
2. Historical sites often have both standing and subsurface material remains; it is important that the investigating archaeologist understand that both have an equal degree of importance as cultural remains
3. Sites should not be considered more important solely because they are more unusual than others; similarly, sites created by the activities of particular ethnic groups should not be viewed as more important than sites originating from the activities of mainstream society
4. Significance evaluations should not be based only on the activities within the state (Illinois), but should also take into account regional criteria, research questions, and activities in other contiguous states

Reed, Alan D.

1987. "A Technique for Ranking Prehistoric Sites in Terms of Scientific Significance." *American Archaeology*. 6(2):127- 130.

#### Key Points

1. Assessing significance is difficult due to research bias and the differing abilities of researchers
2. Sites can be significant for different reasons (e.g., scientific, ethnic, educational, legal)
3. Regional research designs are inadequate for assessing significance due to the amount of data to be reduced, the number and competency of archaeologists formulating designs, and the restricted nature of contemporary research problems
4. Most prehistoric sites are best evaluated in terms of scientific significance alone; does not preclude evaluation via other criteria, such as ethnic concerns, being used for saving particular sites

#### Recommendations

1. Evaluate sites on an interval, rather than nominal, scale
2. General research concerns contain less bias than specific research designs; ergo, rank sites based on "***physical attributes and very generalized research domains***"; use variables such as site size, number of artifacts, number of artifact classes, lithic material varieties, site condition, ceramics, ground stone, datable materials, features or structures, macroflora/ fauna, subsurface deposits, distinctive site type, and cultural affiliation. Assign "category value" to these variables, multiply by a weighing factor (based on relative importance of variables: e.g., subsurface deposits more important than surface scatter), plot results on histogram, make subjective break between distribution of significant versus non-significant sites
3. Using this process, the cultural resource manager could "***consider a number of sites from a specified geographical area and thereby identify as significant sites with more comparable qualities***" rather than "***going along with a field archaeologist's appraisal of a site or a set of sites***"
4. To deal with small, limited-activity sites, a representative sample should be selected for preservation, and the regional research design could be written to stress their importance

Tainter, Joseph A.

1987. "The Politics of Regional Research in Conservation Archaeology."  
*American Archaeology*. 6(3):217-227.

#### Key Points

1. There are many problems with current CRM, and regional research designs are often viewed as the solution
2. Regional research designs are epistemologically and scientifically flawed, as they are based on two assumptions:
  - (a) Significance is an inherent property, and
  - (b) Scientific inquiry is a rational, cumulative, linear process in which knowledge increases

The first is demonstrably not true, since a site's "significance" changes with time and observer; the second is actually a process of consensus and conformity within the scientific social subsystem, whereby change is a punctuated phenomenon, based on accumulation of empirical data which do not fit existing paradigms

3. Archaeology is a discipline with a great deal of theoretical and technical diversity (i.e., a low degree of theoretical consensus) and a few acknowledged decision makers

#### Recommendations

1. A committee format may be the best approach to consensus-building because it allows for the inclusion of a broad spectrum of competing theories: ***"To the extent. . . that the planning process is designed to accord with the intellectual and political status of the discipline, consensus may be maximized"***
2. Decisions based on present knowledge can be detrimental to the cultural record due to biases in current research orientations; ergo, *before* planning, reviewers should consider:
  - (a) What local political structure is best suited to the planning process? (committee recommended)
  - (b) What process will achieve the best balance between consensus and innovation?
  - (c) How can flexibility be built into the plan?, and
  - (d) When plan is under revision, how can sources of bias be reduced to maintain the maximum potential of the database for future use?

3. A preservation plan is designed to preserve sites, but it may not serve as a basis for excluding a site from protection
4. Simple or stratified random sampling of space eliminates problems of bias (cf. Lipe's [1974] "archaeological preserves")

Advisory Council on Historic Preservation

1988. *Identification of Historic Properties: A Decision Making Guide for Managers*. Washington, D.C.: Jointly issued by the Advisory Council on Historic Preservation and the National Park Service (U.S. Department of the Interior).

Key Points

1. This publication presents guidelines for identifying historic properties for the purposes of developing management plans that take into consideration the existence of historic properties in the planning and implementation of land use and development projects
2. Following Section 106 procedures, managers are required to:
  - (a) Identify and evaluate historic properties
  - (b) Assess the effects of proposed impacts on those properties
  - (c) Consult with various appropriate agencies or organizations to develop plans to minimize or eliminate the proposed impacts on historic properties, and
  - (d) Proceed with activities as arranged between the manager and the consulting agency or organization

Grumet, Robert S.

1988. *Archeology in the National Historic Landmarks Program*. Archeological Assistance Program Technical Brief No. 3. Washington, D.C.: U.S. Department of the Interior, National Park Service.

#### Key Points

1. Lists National Historic Landmark (NHL) criteria, including criterion (6) which states that significant sites are those: *"that have yielded or may be likely to yield information of major scientific importance by revealing new cultures, or by shedding light upon periods of occupation over large areas of the United States; such sites are those which have yielded, or which may reasonably be expected to yield data affecting theories, concepts and ideas to a major degree"*
2. Archaeologists seeking NHL status for a site or group of sites must make reference to criterion (6)
3. NHL candidates must possess a *"substantially higher degree"* of integrity than that required for National Register designation
4. NHL nominations must include reference to relevant *"themes, subthemes, and facets"* (i.e., problem- or subject-orientation)

Knoerl, John, Diane Miller, and Rebecca H. Shrimpton

1989. *Guidelines for Restricting Information About Historic and Prehistoric Resources*. National Register Bulletin, Volume 29. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. This bulletin provides guidelines for determining which resources should have information restricted from general distribution in order to protect those resources from looting, vandalism, and unauthorized public visitation
2. Sites or resources that are considered significant at the time they are initially reviewed may lose such credibility when their integrity is compromised through looting and vandalism, particularly when their role in an archaeological research design is compromised by the theft or destruction of artifacts and features

McClelland, Linda Flint, J. Timothy Keller, Genevieve P. Keller, and Robert Z. Melnick  
1989. *Guidelines for Evaluating and Documenting Rural Historic Landscapes*. National Register Bulletin, Volume 30. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. This bulletin provides guidelines for evaluating and documenting rural historic landscapes, defined as ***"a geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features"***
2. ***"Assessments of significance are based on a well-formulated research design that considers the historic contexts for the study areas. The research design needs to indicate the landscape characteristics that are represented in the site and the information the site is likely to provide about the landscape characteristics that shaped an area in history or prehistory"***

Schaafsma, Curtis F.

1989. "Significant Until Proven Otherwise: Problems Versus Representative Samples." In *Archaeological Heritage Management in the Modern World*. Henry Cleere (ed.). London: Unwin Hyman. pp. 38-51.

#### Key Points

1. The hypothetico-deductive method of doing archaeology (stating a scientific goal and then obtaining data to support it) must be carefully balanced against other scientific endeavors, such as inductivism (obtaining all the data and then trying to make something of it), since archaeologists using the deductive method, particularly in CRM contexts, are often faced with data that do not fit their research goals
2. On the other hand, retrieving data solely for its own sake leads to an overwhelming amount of material which is impossible to analyze in any detail, data redundancy, and a waste of financial resources

#### Recommendations

1. To reach a balance, data should be retrieved to answer desired research questions; in addition, a representative sample of the remaining types of discernible data should also be collected
2. Resources should be considered relevant to research until they are proven irrelevant to all current and reasonably anticipated research questions

Williams, Ishmael, Frederick L. Briuer, and W. Fredrick Limp  
1989. *An Analysis of Archaeological Site Variability at Fort Hood*. Report submitted to the U.S. Army Corps of Engineers. CERL, Champaign, Illinois. Project No. 689.

*{N.B.: See SBN 82 (Trierweiler 1994) for an alternative view}*

#### Key Points

1. This is the first of three articles resulting from the same overall project to establish a representative sample of archaeological sites from Fort Hood, Texas (*see also SBNs 64 and 70*)
2. It is possible to design and develop pragmatic, cost-effective management options to avoid unnecessary damage to cultural resources
3. Large land units (like Fort Hood) provide increasingly rare opportunities to investigate archaeological resources and their complex interrelationships at a regional scale
4. Research in these extensive, regulated areas can produce innovative approaches for evaluating and managing complex sets of cultural resources; in addition, these approaches are applicable to a wide variety of other contexts
5. At Fort Hood, significance evaluations were postponed until site evaluations could be undertaken over a large area using a detailed, comprehensive, and multidimensional database
6. In order to carry out significance evaluations at this larger scale, it was necessary to:
  - (a) Regard site-by-site assessments (associated with piecemeal surveys) as strictly provisional, and
  - (b) Accelerate conventional site assessments (on the basis of available information) where land parcels were threatened by immediate and irrevocable damage
7. Survey policy was to consider all sites as potentially significant until proven otherwise
8. Final evaluations, on a site-by-site basis, can usefully incorporate additional knowledge or criteria not employed in the original assessment strategy (particularly in cases where field data are largely incomplete)

9. Ongoing research and analysis are important elements in this (and other) CRM efforts; *"...focusing on the protection of a fewer number of high priority sites is not an end to the management process but simply an important milestone or tool for more efficiently meeting long-term management commitments and establishing further protection and mitigation"*

Briuer, Frederick L., G. Ishmael Williams, and W. Frederick Limp  
1990. "Geographic Information Systems: A Tool for Evaluating Historic Archaeological Sites." *Mississippi Archaeology*. 25(1):43-63.

#### Key Points

1. This article represents an extension of other research (*SBNs 63 and 70*) and offers a position with regard to applied cultural resource management problems, in this case, how to evaluate large inventories of historic sites
2. Significance evaluations for over 1000 historic sites in a 339 square mile region of Central Texas were based on a diverse range of information acquired from intensive surveys and analytical projects conducted over a 10-year period
3. Patterns of site variability will not be perceived when made on a conventional site-by-site basis; demonstrating regional patterns of historic resource variability involved fine-grained multidisciplinary information resulting from a long-term, applied research commitment
4. The long-term investment in developing a regional database and the use of GIS as an analytical tool for grappling with significance evaluation are recent developments in CRM that offer alternatives to conventional evaluation strategies
5. The automation and GIS tools used in this research have become increasingly available and user-friendly, and offer more rapid and efficient ways to describe complex regional patterning previously considered too tedious and labor intensive to undertake
6. Approaches using automation tools and GIS, supported by the 'S' statistical package, are described. These methods include univariate, bivariate, and multivariate statistical techniques to group and classify a large and diverse historic assemblage in explicit ways that can be replicated and improved upon
7. This research attempts to establish a representative preservation sample that minimizes unnecessarily expensive and destructive management practices

#### Recommendations

1. Important to develop fine-grained, comprehensive, and multidimensional databases for resource management at a regional scale

2. Expand the concept of applied research for evaluating resources to include the efficient exploitation of a wide range of appropriate interdisciplinary regional information (that will transcend the usual information derived from destructive site excavations)
3. Exploit available automation and GIS technologies as more efficient tools for evaluation
4. Consider alternatives to the conventional site-by-site, project-by-project, evaluation procedures. If impact avoidance is possible, evaluations should be deferred until regional information frameworks are developed, allowing for a more holistic basis for formally establishing representativeness
5. Maximize the option to avoid impacts until sufficient research and analysis has been undertaken to demonstrate representativeness defensibly

Hardesty, Donald. L.

1990. "Evaluating Significance in Historical Mining Districts." *Historical Archaeology*. 24:42-51.

#### Key Points

1. Like most other historical and archaeological sites, mining districts can be viewed as significant for National Register purposes; some of the major problems faced in applying these legal criteria to mining areas are the lack of well-developed theoretical concepts and research designs that would include this type of site
2. Unlike many other classes of historical sites (e.g., buildings), mines are not discrete entities, but constitute a vast network of related features and objects ranging from elevator shafts to smelting mills; these features are all integrally related and should not be viewed as separate sites
3. To assess a mining district and determine its significance, an "evaluation matrix" could be created, based on the established research design for the region in general; this matrix would act as a general guideline and would take account of variables such as information content and site integrity. Using these data, a district could be "graded" to determine its eligibility for the National Register in comparison with other mining districts

McManamon, Francis P.

1990. "A Regional Perspective on Assessing the Significance of Historic Period Sites." *Historical Archaeology*. 24(2):14-22.

#### Key Points

1. Significance evaluations should consider all four National Register criteria not just the most commonly used criterion, (d), which emphasizes eligibility based on whether sites *"have yielded, or may be likely to yield information important to prehistory or history"*
2. Author argues that it is irresponsible to regard all sites as significant and offers some rationale to support this view
3. Archaeologists have the responsibility to provide convincing intellectual arguments to support significance attributions
4. Frequency, redundancy, and rarity of types are attributes which should be viewed within a regional context; although these variables are important in assessing significance, they should not be the exclusive bases for such evaluations

#### Recommendation

Author suggests a survey method using stratified random sampling and a formal analytical procedure for making probability statements about the relative frequency of specific site types in a region

Parker, Patricia L. and Thomas F. King

1990. *Guidelines for Evaluating and Documenting Traditional Cultural Properties*. National Register Bulletin, Volume 38. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. This bulletin provides guidelines for determining the significance of traditional cultural properties, i.e., resources that are important ***"to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through written practice"***
2. Because traditional cultural values are an essential foundation upon which many communities or groups define themselves, the damage or destruction of a resource which is considered by the group to be culturally important may be seen as offensive or damaging to their system of values
3. In many cases, the only way in which traditional cultural properties can be properly identified is by learning of their importance from the ethnic group or cultural community that values them. This might prove difficult because some members of a group might consider a property to be ethnically significant, while other members of the group might not
4. As with most other concepts of significance, ethnic significance is a dynamic entity. A site that was considered important by a particular ethnic group in the past might not be considered important now; similarly, a site that was not considered important in the past might be considered extremely important in the present

Scott, Douglas D.

1990. "Site Significance and Historical Archaeology - A Scenario and Commentary." *Historical Archaeology*. 24(2):52-54.

#### Key Points

1. Often project managers are willing to admit the value of prehistoric sites in their project areas, but they are sometimes less willing to grant historic sites the same status, particularly those sites which represent "mundane" everyday life
2. What is often lacking in attempts to persuade project managers of the value of these sites is the ***'practical example of the application of significance criteria to the so-called mundane or commonplace site'***
3. ***"Archaeologists must be careful to remember not to let regional biases cloud the objective and critical evaluation of a site's significance"***; "recent" sites, or sites known within living memory or through oral history, can offer major contributions to the field, particularly when living informants can contribute to their understanding
4. It must always be remembered that a site's significance may change with time and changing cultural perceptions

Smith, Samuel D.

1990. "Site Survey as a Method for Determining Historic Site Significance."  
*Historical Archaeology*. 24(2):34-41.

#### Key Point

***"Without adequate data concerning how a site relates to some broader social system, the defining of 'important' research questions tends to be a rather sterile exercise"***; site context and its relation to other sites in the region must be understood before specific research questions can be addressed concerning significance; this requires survey work

#### Recommendation

Because certain site types would have greater historical importance in some areas than in others, archaeologists should attempt to review and develop an understanding of the local and regional (perhaps county-wide) history of an area and the interrelations of sites within this area before significance evaluations are made; this approach can be applied in almost any context on the local level and provides a more objective means of determining historical significance

Williams, Ishmael, W. Fredrick Limp, and Frederick L. Briuer  
1990. "Using Geographic Information Systems and Exploratory Data Analysis for Archaeological Site Classification and Analysis." In *Interpreting Space: GIS and Archaeology*. Kathleen M. S. Allen, Stanton W. Green, and Ezra B. W. Zubrow (eds.). London: Taylor and Francis. pp. 239-273.

*{N.B.: While this paper does not focus explicitly on the issue of significance, it is the extension of a broader research program (see SBNs 63 and 64) designed to establish a representative sample of sites, as well as their significance, at a large regional scale (i.e., the Fort Hood military installation, Texas). Given the importance of integrative tools such as GIS for significance evaluation and the emphasis on such tools expressed in the recent archaeological literature, this paper has been included here}*

#### Key Points

1. This discussion expands on earlier research (Williams *et al.* 1989; Briuer *et al.* 1990) which aimed to develop new methods of significance evaluation for the large inventory of cultural resources at Fort Hood
2. The research presented here shifts from applied cultural resource management concerns to more basic archaeological research and goes beyond the conventional use of GIS
3. A large multidimensional database (dBASE IV and INFORMIX) was developed that included formal archaeological and environmental information
4. The GIS tools in GRASS were used along with Exploratory Data Analysis (EDA) techniques and the S Statistical software package to discover patterning in complex multidimensional data sets that are not necessarily obvious or self-evident
5. A pilot study was conducted that formally analyzed historic site variability in the region under investigation
6. The authors encourage the use of GIS technology as one element in a suite of analytical tools that can also include EDA and supplemental statistical software

Wilson, John S.

1990. "We've Got Thousands of These! What Makes an Historic Farmstead Significant?" *Historical Archaeology*. 24(2):23-33.

#### Key Points

1. Historic, single-family farmsteads are one of the most common site types in the country. Determining which are significant and which are unimportant can be one of the most exasperating tasks facing cultural resource managers
2. To obtain some idea of which sites might be eligible for nomination to the National Register, the following questions could be asked:
  - (a) *"Are the features and archaeological deposits temporally and spatially distinct?"*
  - (b) *"Was destruction of the superstructure catastrophic (as opposed to deliberate)?"* A deliberately burned structure may have been abandoned first and therefore may not reflect the distribution of materials, and range of features present, at the time it was occupied, and
  - (c) *"Is there a good record of successive occupations, relative to the record for similar sites in the study area?"*
3. Using the above criteria:
  - (a) A "good" site would be characterized by various features and remains that are identifiable and separate, by excellent documentation concerning owners and tenants, and by a structure that was destroyed accidentally on a known date
  - (b) A "bad" site would have poor documentation concerning occupation, a considerable amount of temporally inseparable material, and would have been emptied and abandoned before destruction, and
  - (c) An "ugly" site would display various combinations of criteria representing "good" and "bad" farmsteads (e.g., a poorly documented farmstead that had suddenly burned down)
4. Attribution of "good," "bad," and "ugly" sites would be based on a sliding scale, so that a site's placement in a given category would be relative to the overall condition of all similar sites in the study area; the purpose of this scheme is to provide reviewer with a means of analyzing data from a large number of sites in a concrete and manageable way

Lee, Antoinette J. and Linda F. McClelland

1991. *How to Complete the National Register Multiple Property Documentation Form*. National Register Bulletin, Volume 16B. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Point

This bulletin provides instructions for properly filling out the National Register of Historic Places Multiple Documentation Form for multiple property listings for properties forming a thematic group

McClelland, Linda F.

1991. *How to Complete the National Register Registration Form*. National Register Bulletin, Volume 16A. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. This bulletin gives instructions for properly filling out the National Register of Historic Places Registration Form in order to document historic properties for nomination to the National Register, as well as for determining the eligibility of properties
2. A site's *area of significance* refers to its applicability to one or more of the criteria established by the National Register
3. Significance and historic function are not the same. Historic function relates to a site's "***practical and routine uses***"; significance relates to the site's "***contributions to the broader patterns of American history, architecture, archeology, engineering, and culture***"
4. "***Local history is a level of significance, not an area of significance***"

U.S. Department of the Interior

1991. *How to Apply the National Register Criteria for Evaluation*. National Register Bulletin, Volume 15. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. An archaeological site may prove significant if it has characteristics suggesting the likelihood that it possesses configurations of artifacts, soil strata, structural remains, or other natural or cultural features that make it possible to do the following:
  - (a) Test a hypothesis or hypotheses about events, groups, or processes in the past that bear on important research questions in the social or natural sciences or the humanities;
  - (b) Corroborate or amplify currently available information suggesting that a hypothesis is either true or false; or
  - (c) Reconstruct the sequence of archaeological cultures for the purpose of identifying and explaining continuities and discontinuities in the archaeological record for a particular area
2. To demonstrate the application of these characteristics, numerous examples are provided using a variety of properties to illustrate the determinations of significance

Delgado, James P.

1992. *Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places*. National Register Bulletin, Volume 20. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. This bulletin offers instructions for identifying, evaluating, and nominating historic vessels and shipwrecks to the National Register of Historic Places
2. Significance evaluations of shipwrecks should address anthropological research issues
3. Because shipwrecks are by their very nature limited in their physical intactness, resource integrity should not be considered limited to wrecks with intact hulls, since even scattered remains can generate data capable of addressing research questions
4. ***"Intensive salvage, looting, or the collection of artifacts, does not necessarily compromise integrity"***; these activities may only affect the focus of research

Delgado, James P. and Kevin J. Foster

1992. *Guidelines for Evaluating and Documenting Historic Aids to Navigation*. National Register Bulletin, Volume 34. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. This bulletin provides guidelines for nominating lighthouses and other historic aids to navigation to the National Register
2. The inferred significance of a property is mostly a product of its context; whereas a site may not be considered important in and of itself, it may be very significant when considered in conjunction with national, regional, or local contexts

Grumet, Robert S.

1992. *The National Historic Landmarks Program Theme Study and Preservation Planning*. Archeological Assistance Program Technical Brief No. 10. Washington, D.C.: U. S. Department of the Interior, National Park Service.

#### Key Point

Criterion (6) of National Historic Landmark criteria is used for evaluating significance of Historic Contact Period sites on Park Service lands; high priority is accorded to *"nationally significant properties associated with subthemes, facets, and subfacets not represented or under represented in National Historic Landmark Subtheme D, 'Ethnohistory of Indigenous American Populations'"*; also of high priority are properties in states or regions *"not containing existing National Historic Landmarks associated with Historic Contact"*; also properties *"associated with Historic Contact Period Indian cultures identified in the theme study not presently represented in the National Historic Landmark framework"*; in other words, evaluations should use a thematic context for assessing relative site importance, with both spatial and ethnic representativeness being considered

Leone, Mark P. and Parker B. Potter, Jr.

1992. "Legitimation and the Classification of Archaeological Sites." *American Antiquity*. 57(1):137-145.

#### Key Points

1. Discussion of the significance issue is still open
2. "Significance" has a variety of meanings; two are:
  - (a) Self-referential: professional estimation of site quality and quantity; "significant" is equivalent to important or interesting, within a framework of problem-oriented, hypothesis-testing archaeology, and
  - (b) National Register criteria
3. Trying to save everything is self-defeating
4. Traditional approaches to significance weaken CRM (and archaeology generally) by cutting it off from its constituency and depriving that constituency of the best that archaeology can offer
5. Two major constraints that exist within CRM archaeology are the concepts of: (a) Logical positivism, and (b) Essentialism
  - (a) The problem with *logical positivism* is that it does not examine basic assumptions, its narrow parameters for developing hypotheses neutralize archaeology politically, and it is not self-correcting, and
  - (b) The problem with *essentialism* is that it assumes that meaning (or significance) is an inherent property of cultural resources; this implies that significance is static rather than dynamic and revealed as opposed to assigned
6. Concepts of "the past" are often based on the prevailing views of those groups that dominate government institutions; values of significance are often determined by these views. Archaeologists knowingly or unknowingly adopt these views, thereby becoming tools of the governmental power structure

#### Recommendations

1. Self-reflection, "***which includes a careful consideration of the exploitation and inequalities that any piece of work could, potentially, be used to support (Potter 1991)***"

2. Create a "[d]ialogue among equals"; i.e., make *"professionals and the people they serve equal and relatively enfranchised participants in the process of making decisions"* by *"establishing conversations with the parties whose heritage is being classified"*; i.e., seek input from 'outside groups,' present them with information in a nonjargonistic, accessible manner, and take their input concerning significance to be equal to that of archaeologists

Advisory Council on Historic Preservation

1993. *Historic Resource Management Plans (Draft)*. Washington, D.C.: Advisory Council on Historic Preservation.

#### Key Points

1. This outline contains general guidelines for developing Historic or Cultural Resource Management Plans, offering the following criteria:

- (a) Overview
- (b) Land use and resource data
- (c) Policy and management guide, and
- (d) Action plan

2. It also provides guidelines for implementing these management plans and standards for satisfying historic preservation responsibilities

Townsend, Jan, John H. Sprinkle, Jr., and John Knoerl

1993. *Guidelines for Evaluating and Registering Historical Archeological Sites and Districts*. National Register Bulletin, Volume 36. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division.

#### Key Points

1. This bulletin provides guidelines for defining historical archaeological properties, documenting them, and nominating them to National Register of Historic Places
2. When considering the information potential of a site or property, it is important to consider not only the data that the site can provide in and of itself, but also the historic context on which it is based; this includes not only the data types and archaeological patterning that make up a property, but also the property's interrelations with other sites in the surrounding area
3. The information potential of a resource should be addressed not only in the research designs of interested archaeologists, but also in the historic preservation plans of the state or region in which it is located

Peacock, Evan

1994. *Cultural Resources Inventory, Timber Thinning Areas, Fiscal Year 1994, Bayou Bodcau Reservoir, Bossier and Webster Parishes, Louisiana*. Report submitted to the U.S. Army Corps of Engineers, Vicksburg District. Panamerican Consultants, Inc., Tuscaloosa, Alabama.

#### Key Points

1. When dealing with prehistoric archaeological sites, chronological control is of great importance, since most current research problems depend on a firm grasp of the chronology of an area; therefore, it is essential that representative samples of all of the sites in a given region are preserved so that, as temporal estimations are continually being refined, research problems can continue to be pursued using as representative a range of sites as possible
2. Historic archaeological sites, while having good temporal control, often lack an extensive database, since historic sites, for the most part, have only recently become of interest to archaeologists
3. Many historic sites, because of their age, are often not considered by archaeologists to be of importance. However, since concepts of significance will undoubtedly continue to evolve as they have, such sites may be considered significant in the future, and a sample should therefore be preserved
4. Regional sampling strategies may provide a more objective means for preserving sites, but, on a project-by-project basis, it is beyond the means of most managers; only with the continuous development of a regional database could such a sampling strategy be feasible
5. An overall database could be developed at present, but it would suffer from the biases of current research strategies; in other words, historic sites would be underrepresented because they have not been sufficiently valued or investigated

Trierweiler, W. Nicholas

1994. "Managing Cultural Resources on Large Military Installations." In *Significance Standards for Prehistoric Cultural Resources: A Case Study from Fort Hood, Texas*. G. Lain Ellis, Christopher Lintz, W. Nicholas Trierweiler and Jack M. Jackson. USACERL Technical Report CRC-94/04. August 1994. USACERL: Champaign, Illinois. pp. 1-12.

*{N.B.: Refer to SBN 63 (Williams et al. 1989) for an alternative view}*

#### Key Points

1. ***"(A)ll sites should be evaluated for significance immediately upon their initial discovery (if this is possible)"***
2. ***"The problem domains, hypotheses, test implications, and data requirements are all needed so as to construct a 'yardstick' against which to measure the significance of any cultural resource. Resources which meet many of the data requirements are judged to be significant; resources which meet few of them are judged not significant. Importantly, the yardstick (research design) must be considered in advance, so that all resources are evaluated fairly and in a comparable manner"***; this does not imply research designs are static or unchanging, since it is necessary to review/revise these designs as new data become available and new questions arise
3. Developments in research can transform the status of sites from insignificant to significant, and vice versa
4. ***"Within the context of a research design, the significance of any resource can (at least theoretically) be determined by means of a records search followed by a single, well planned field visit"***; however, in practice, some sites require additional work
5. These additional, multi-phase evaluations are undertaken ***"primarily for cost-effective tactical reasons,"*** since different site types require varied levels of investigation in order to be evaluated in a similar fashion, since multistage fieldwork is generally more cost-effective
6. CRM investigations consist of two sequential and complementary phases of significance assessment: (1) ***"inventory"*** (i.e., locating cultural resources and recording relevant observations, where possible) and (2) ***"testing"*** (i.e., determining data potential and significance in cases where inventory work was insufficient to evaluate these variables). Each phase has its own prioritized hierarchy of data requirements

7. There are economic trade-offs in CRM between investments in inventory and testing phases; an emphasis on inventory work implies a greater financial commitment, but may result in evaluation of a larger proportion of sites. Alternatively, less effort on inventory may be cheaper, but probably requires that a larger number of sites be tested at a later stage. Generally, however, it is more cost-effective to place greater emphasis on inventory (to evaluate as many sites as possible and reduce the number of sites to be tested)
8. Scope and complexity of research designs correspond directly with geographic scale of the study area; therefore, as scale increases, so should investment in developing a research strategy
9. Meaningful research designs cannot be divorced from environmental context; ***"identification of a research design's 'data gaps' must be viewed through an environmental filter"***
10. Natural context should be assessed via geomorphological and paleo-environmental analyses, both of which should be conducted prior to undertaking archaeological inventories
11. Geo/paleo-environmental data and GIS can be usefully employed at key points in the Section 106 process: (a) initial development of research design (to identify data gaps and suggest specific research questions/ tactics), and (b) site evaluation (to integrate data concerning environmental context)
12. Important to employ "red flag" concept in CRM; i.e., the idea that anomalous site types and contexts may be deserving of special attention and ***"have a high probability of requiring further management attention"***

Perry, L. Martin

n.d. *Rethinking Significance: An Archaeological Approach to Architectural and Historical Significance*. Heritage Sprint Supplement, Kentucky Heritage Council. pp. 7-13.

### Key Points

1. The National Register has great applicability for preserving cultural resources if inherent weaknesses are acknowledged and corrected; these weaknesses are epitomized in the mistaken view that sites have inherent significance. Significance, however, is a subjective variable since conceptions of significance are based on an individual's (multiple) frames of reference
2. National Register criteria A-C imply that significance is inherent in the object itself because of its association with significant persons, events, and ideas (although the significance of these matters has never been defined); Criterion D does not see significance in the site itself, but in the information it can provide. This archaeological information is the heart of the real subjectivity of the National Register, since the kind of information viewed and valued depends on the researcher's goals

### Recommendations

1. Since the National Register is so well established, it is unlikely to be abandoned; therefore, rather than opposing it, archaeologists should learn to work with the Register. Instead of categorical declarations about a property's significance, reviewers should explain how they see the resource's significance, so that evaluators are regarded not as 'experts' pointing out inherent significance that does not exist, but rather as advocates persuading others of a site's value as they see it
2. Evaluations can be improved if all parties bear in mind:
  - (a) Significance is a function of a given perspective
  - (b) Any one place will have variable amounts, and different varieties, of significance (i.e., have different types of relationships with persons, events, ideas, information, etc.)
  - (c) Sensitivity to others' perspectives can lead to more effective decisions about altering the built environment, and
  - (d) Plans to transform the built environment should involve comprehensive impact assessment prior to definitive decisions

# REPORT DOCUMENTATION PAGE

*Form Approved*  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

<b>1. AGENCY USE ONLY (Leave blank)</b>	<b>2. REPORT DATE</b> April 1997	<b>3. REPORT TYPE AND DATES COVERED</b> Final report	
<b>4. TITLE AND SUBTITLE</b> Trends and Patterns in Cultural Resource Significance: An Historical Perspective and Annotated Bibliography		<b>5. FUNDING NUMBERS</b>	
<b>6. AUTHOR(S)</b> Frederick L. Briuer, Clay Mathers			
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> U.S. Army Engineer Waterways Experiment Station 3909 Halls Ferry Road, Vicksburg, MS 39180-6199		<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b> Technical Report EL-97-5	
<b>9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b> U.S. Army Corps of Engineers Washington, DC 20314-1000		<b>10. SPONSORING/MONITORING AGENCY REPORT NUMBER</b> IRW Report 96-EL-1	
<b>11. SUPPLEMENTARY NOTES</b> Available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.			
<b>12a. DISTRIBUTION/AVAILABILITY STATEMENT</b> Approved for public release; distribution is unlimited.		<b>12b. DISTRIBUTION CODE</b>	
<b>13. ABSTRACT (Maximum 200 words)</b> <p>This publication offers a broad, analytical review of the literature concerned with the challenging subject of evaluating cultural resource significance. This review of significance includes two main sections: (a) and <b>Annotated Bibliography</b> (consisting mostly of peer-reviewed literature) and (b) an <b>Analysis Section</b> (devoted to tracing historical trends in archaeological method and theory). The literature summarized here is extensive and is not accessible widely to the archeological and cultural resource management (CRM) communities. After analyzing a wide range of publications, 21 major themes or concepts were established to characterize the breadth of archaeological views and ideas about significance. A review of each theme was undertaken, including both a discussion and a graphical presentation of trends through time. Systematic indexing and cross-referencing of publications, authors, and significance themes have also been carried out to assist users in locating references of special interest. The concluding section offers some suggestions and insights into the future direction of significance evaluation with respect to the work unit and within CRM generally. Particular emphasis is placed on the opportunities to develop more holistic management strategies, to make greater use of new approaches and technologies, and to use more explicit evaluation methods.</p>			
<b>14. SUBJECT TERMS</b> Archaeological significance Cultural resource management Cultural resource significance evaluation		Heritage management Historic preservation Historic property evaluation	
		<b>15. NUMBER OF PAGES</b> 193	<b>16. PRICE CODE</b>
<b>17. SECURITY CLASSIFICATION OF REPORT</b> UNCLASSIFIED	<b>18. SECURITY CLASSIFICATION OF THIS PAGE</b> UNCLASSIFIED	<b>19. SECURITY CLASSIFICATION OF ABSTRACT</b>	<b>20. LIMITATION OF ABSTRACT</b>