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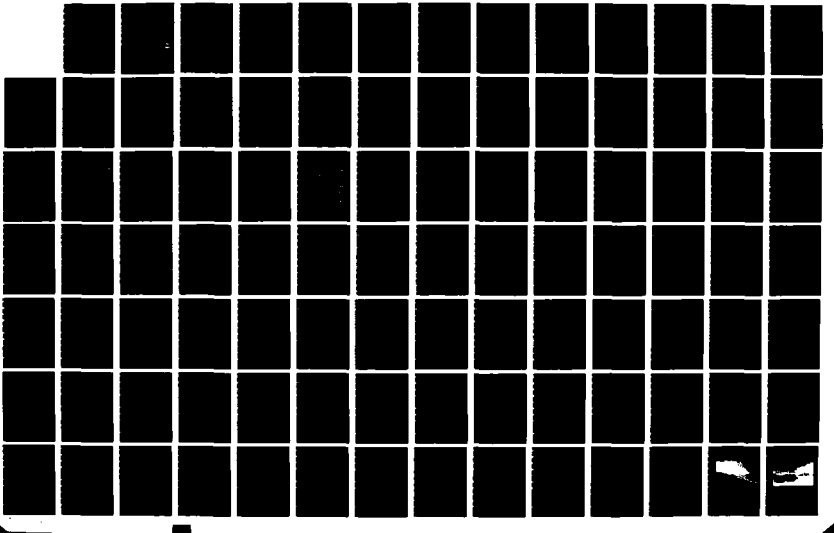

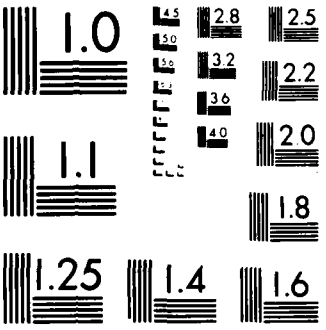

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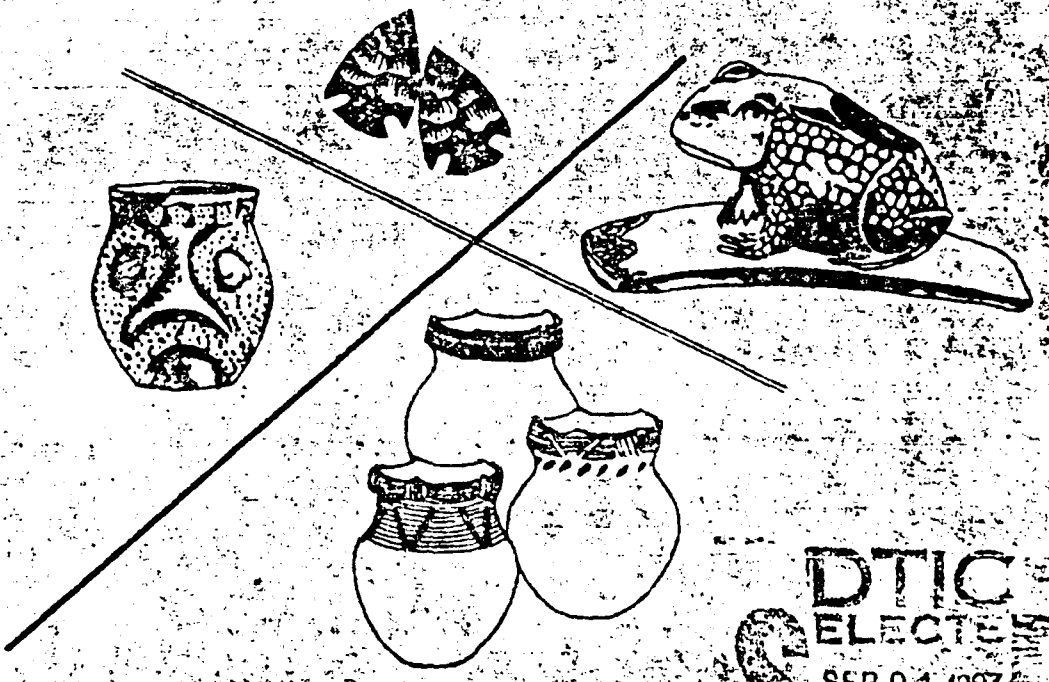
Reports of Investigation No. 187

CULTURAL RESOURCES MANAGEMENT PLAN: CORALVILLE LAKE, IOWA



MILWAUKEE, WISCONSIN

THE ARCHAEOLOGY OF CORALVILLE LAKE, IOWA - FINAL CULTURAL RESOURCES MANAGEMENT PLAN

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A B S T R A C T

This report entitled, "The Archaeology of Coralville Lake, Iowa - Final Cultural Resources Management Plan," collectively summarizes eight distinct archaeological and geomorphological investigations at Coralville Lake. The various studies include survey, testing, and geomorphic investigations. "The Archaeology of Coralville Lake, Iowa - Landscape Evolution" presents the detailed results of the geomorphic investigation. Two studies provide the results of a sample survey at Coralville Lake and a subsequent biased survey of special use areas. A comprehensive data file presents detailed, site specific information for those archaeological sites investigated as part of this study. The data file includes site forms, maps, artifact tabulations, excavation notes, and provides a summary of the current condition of each archaeological site. An ancillary volume is an atlas which incorporates 1:24,000 scale maps of the project area, archaeological sites, land forms and ages, locations of high and low archaeological potential, locations of all sub-surface investigations, land-use, and an index to detailed (1: 7200) maps subjected to intensive survey, and other related map phenomena. The mapping was accomplished with a computer aided drafting and design system (CADD) so that maps may be periodically updated as new information is available. Additional data includes geomorphic investigations including soil profile

descriptions, organic matter content, and particle size analyses. The most recent study details the result of on-site evaluation of 166 sites at the project area. This report summarizes the survey of 40% of the Coralville Lake project surface area, sub-surface investigations, landscape analyses, archaeological site predictive model, evaluation of 266 archaeological sites, identification of 266 archaeological sites, and provides recommendations for management of the cultural resources of the project lands. The management plan identifies and illustrates procedures for identification, evaluation, conservation, preservation, and interpretation of the resource base. Recommendations for continued management enhancement are presented in the investigation summary.

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LIST OF FIGURES

LIST OF TABLES

PREFACE

This cultural resources management plan is the result of three years of library, laboratory, and field work conducted at Coralville Lake and various other locations. The plan consists of 9 separate volumes although all of the information collected during the many distinct phases are summarized or addressed in this report. Volume I is essentially an overview of all phases of work. This plan integrates the efforts of many individuals whose contributions played a significant role in plan development and implementation. Volume II presents, in a more detailed manner, the geomorphological study of Coralville Lake conducted under the supervision of Mr. Jeffrey D. Anderson. Volume III presents the results of a sample archaeological survey of Coralville Lake supervised in the field by Mr. James G. Stark. Volume IV addresses intensive survey and geomorphic work at special use areas at the Coralville Lake project site which was conducted by Mr. James G. Stark and Mr. Jeffrey D. Anderson. Volume V is a detailed data file compiled and organized by the principal investigator. Volume VI is the archaeological and geomorphic atlas for Coralville Lake. The Volume consists of a series of maps developed with a computer assisted drafting and design system. This volume was developed by the principal investigator and Mr. Anthony Landini of Donohue & Associates, Inc. Volume VII is a geomorphic data file that presents the empirical bases for many of the conclusions and

interpretations presented in Volume II. Finally, the most recent work consists of on-site evaluation of 166 sites (Overstreet, Lurenz, and Rosen 1986).

Development of the cultural resources management plan has benefitted from the perspectives of many disciplines. Perhaps the most unique aspect is that the plan is functional rather than theoretical. It does not rely exclusively on the precepts of archaeology and has been influenced through discussions with land managers, agency officials, and staff persons who have the day to day responsibility of implementing and carrying out the plan. Their collective interest and positive response has been particularly gratifying.

ACKNOWLEDGEMENTS

The Coralville Lake Cultural Resources Management Plan is a collective effort. While the responsibility for designing and carrying out the project lies with the principal investigator, the following individuals had major roles in the conduct of this collective effort:

Great Lakes Archaeological Research Center, Inc.

Archaeological Investigations: James G. Stark and Paul L. Lurenz, Jr., field supervisors; Paul Lurenz, James Clark, John F. Wackman, Holly Smith, Janice Klimowicz, Eggon Lass, and Tom Reed served as the field and lab crew.

Geomorphological Investigations: Mr. Jeffrey D. Anderson, field and lab supervisor, Paul Lurenz and Jake Bendix functioned as field and lab assistants. Ms. Carol Rosen assumed responsibilities for continued geomorphic investigations in 1986.

Report Preparation: Nikki Wackman and Barbara Overstreet provided the skills reflected in report preparation including word processing, drafting, layout, and reproduction. They also provided countless tasks related to project administration.

Donohue & Associates, Inc.

Thanks are extended to Mr. James Kunz, Waukesha Office for project administration, Mr. Anthony Landini, Madison Office for CADD production and development of Volume VI, and Ms. Leslie Knapp, Waterloo Office for assistance with geological reference materials.

Office of the State Archaeologist of Iowa:

Gratification for assistance is extended to Ms. Debbie Zieglowsky for the assignment and clarification of site files and information, and to Dr. Duane Anderson and Dr. Joseph Tiffany for information and access to records and materials housed at the Office of the State Archaeologist.

Iowa Historical Department-Office of Historic Preservation

Our appreciation is expressed to Dr. Kay Simpson for her interest and willingness to explore problems and aspects of Coralville Archaeology in the field on three separate occasions. Thanks also to Dr. Adrian Anderson relating to information on the Waters and Sandy Beach sites and the disposition of artifacts and materials from his investigations on the Iowa River.

Iowa Conservation Commission:

The cooperation of the staff at Lake Mac Bride State Park and the Hawkeye Wildlife Area are greatly appreciated.

Rock Island District, Corps of Engineers:

Successful completion of this work could not have been effected without the assistance and understanding of the professional and technical staff of the Rock Island District, Corps of Engineers. Charles Smith, Robert Dunn, Ken Barr, and Charlene Carmack provided assistance in the field, secured documents and maps, monitored progress, implemented several modifications, and generally provided much assistance and encouragement. Mr. Smith and Mr. Andrew Brucewicz cooperated in development of the GIS used to

manage Coralville Lake Cultural Resources, and, Mr. Brucewicz presented a paper at the Geographic Information Systems in Government workshop held in Springfield, Virginia in December, 1985. Selection of this paper for the published conference proceedings is ample testimony to the success of such cooperative ventures.

Our thanks are also extended to Mr. Paul Van Hoorebeke, contracting officer, for his willingness to discuss modifications, changes of direction, altering of schedules, and the many other problems invariably associated with a project of this level of complexity. Finally, the staff at the Coralville Lake project demonstrated commitment and unflagging enthusiasm for "their" resource and were always sympathetic to the preservation ethic. Particular thanks are extended to Mr. Jerry Demarce and Ms. Kathy Soska.

Department of Geography, University of Wisconsin-Madison:

Dr. James C. Knox provided able assistance with data processing of particle size information and was always willing to serve as a sounding board for some of the conclusions and interpretations presented in Volume II of the management plan. His assistance is greatly appreciated.

Iowa Geological Survey:

Our appreciation is extended to Mr. Art Bettis for two separate visits to the project site to discuss Wisconsinan and Holocene landscape evolution.

INTRODUCTION:

Information regarding the number and distribution of cultural resources at the Coralville Lake project site in Iowa was quite limited when the Resource Master Plan was developed. Nuss (1976) notes:

> At the present time, there are few important archaeological, historical, or other cultural sites in or near the Coralville project. Although a few have the distinction of being on the Federal Register none of these are located near existing or proposed recreation developments. Therefore, no special consideration has to be taken to prevent deterioration of these areas (Nuss 1976: 53).

Subsequent to development of the Resource Master Plan, various cultural resources investigations have demonstrated a substantial archaeological and historic data base is present within the Coralville Lake project boundaries (e.g, Zalesky 1977, Lewis 1979, Roetzel and Strachan 1980, Schermer 1983, Zieglowsky and Zalesky 1981, Emerson et al 1984). The results of these investigations have aided land managers by providing some baseline estimates of the number and variety of cultural resources at Coralville Lake. However, because of the sporadic nature of the previous research (Overstreet and Stark 1985) managers lacked both sufficient data and a comprehensive plan to fulfill their responsibilities relative to cultural resources.

Legislative mandates for these responsibilities are far-reaching (refer to Table 1), often over-lapping, and in certain instances contradictory. However, as a body of laws, executive orders, federal regulations, and guidelines, the cultural resources mandates provide for: (1) Identification; (2) Evaluation; (3) Conservation; (4) Preservation; and (5) Interpretation of the Nation's heritage. Furthermore, these mandates define specific qualifications for investigators, provide standards for

survey and excavation of archaeological and historic sites, and identify acceptable standards for curation of artifacts and data as well as dissemination of information.

TABLE 1: Legislative Mandates and Guidelines-Cultural Resources

Mandate	Provision
Antiquities Act of 1906 (P.L. 59-209), 16 431-33 (1970).	Act authorized the President to designate significant historic and natural U.S.C. resources on Federal lands as National Monuments. Act also provided sanctions for disturbance or destruction of antiquities and for issuance of permits for excavation.
Historic Sites Act of 1935 (P.L. 74-292), 16 U.S.C. 461-67 (1970).	Established National policy for public use through preservation. Authorization for surveys, documentation, evaluation, and preservation. Basis for Historic sites survey, Historic American Buildings Survey, and Historic American Engineering Record (HSS, HABS, HAER).
National Historic Preservation Act of 1966 (P.L. 89-665) U.S.C. 470-470m.	Act authorizes the expansion and maintenance of National register, including districts, sites buildings, structures, and objects of local, state, and national significance. Grants for statewide surveys and plans.
Amendment to the Land and Water Conservation Act of 1965 (P.L. 94-422) 16 U.S.C. (1976).	Authorizes additional funding for statewide surveys and plans. Established Advisory Council on Historic Preservation as an independent agency. Amended 4601-4 Section 106 of N.H.P. Act of 1966.
Executive Order 11593 Protection and Enhancement of the Cultural Environment, 16 U.S.C. 470 (Supp. 1, 1971).	Directs Federal agencies to assume a leadership role in Historic Preservation. Federal Agencies must survey, inventory, and nominate all historic resources under their control to National Register.
The Archaeological and Historic Preservation Act of 1974 (P.L. 93-291) 16 U.S.C. 469a.	Directs the preservation of historic and archaeological data that would otherwise be lost as a result of Federal construction or licensed or assisted activities. Authorizes the recovery, protection, and preservation of such data. Establishes notification procedures.

Mandate	Provision
National Environmental Policy Act of 1969 (P.L. 91-190) 42 U.S.C. 4321 et. seq. (1970).	Obligates Federal Agencies to consider environmental costs of projects as part of planning process. Specifies preparation of environmental impact statements.
Flood Disaster Protection Act of 1973 (P.L. 87 STAT. 975, 12 U.S.C. 24, 1709-1, 42 U.S.C. 4001 et. seq.	Historic preservation projects in special hazard areas must include flood 93-234) insurance.
Emergency Home Purchase Assistance Act of 1974 (P.L. 93-449) 12 U.S.C. 1723e.	Authorizes Federal insurance and loans to finance restoration or rehabilitation of residential structures on or eligible for the National Register.
Archeological Resources Protection Act of 1979 (P.L. 96-95) U.S.C. 470aa.	Requires a permit for any excavation or removal of archeological resources from public or Indian lands. Excavations must be undertaken for the purpose of furthering archeological knowledge in the public interest. Provides for Indian consent.
Amendment to Housing Development Act of 1974 (P.L. 96-399) 42 U.S.C. 5320.	Applicants for UDAG grants must include in their application identified properties on or potentially eligible for the National Register.
Tax Reform Act of 1976 (Amendment to P.L. 96-541).	Extended the provisions of the Tax Reform Act to January 1, 1984.
Amendments to the National Historic Preservation Act of 1966 (P.L. 96-515) 16 470.	Has several provisions including certification of local governments to participate in the program, recognition of SHPOs, codification of survey U.S.C. responsibilities for properties under control or ownership of Federal agencies, stricter protection for National Historic Landmarks, and provisions for private owners to object to listing their property on the National Register.
The National Advisory Council's Procedures for the Protection of Historic and Cultural Properties (36 CFR, Part 800).	Establishes procedures for inventory, evaluation, conservation, and preservation of significant sites and properties.

Mandate	Provision
Recovery of Scientific, Prehistoric, Historic, and Archaeological Data: Methods, Standards, and Reporting Requirements (36 CFR Part 66).	Provides information regarding methods and techniques of investigation, reporting requirements, and rationale and standards for data collection.
Criteria for Comprehensive Statewide Historic Surveys and Plans (36 CFR Part 60).	Establishes qualifications for professionals in history, archaeology, architectural history, architecture, and, for designation of State Review Board.
Corps of Engineers Identification and Evaluation of Cultural Resources (E.R. 1105-2-50).	Identifies procedures for identification, evaluation, conservation, and preservation specific to Corps of Engineers responsibility.
*Treatment of Archeological Properties (Advisory Council on Historic Preservation 1980).	Comprehensive information relating to survey, testing, recovery, interpretation, etc., for archaeological resources.
*Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (Federal Register, Vol. 48, No. 190, Thursday, September 29, 1983).	Department of Interior guidelines.

(* these are sources of information, not legislative mandates)

The purpose of the following management plan is to secure compliance through the means of effective and efficient planning and implementation.

GOALS AND OBJECTIVES OF THE CULTURAL RESOURCES MANAGEMENT PLAN:

As noted, the legislative framework provides for the protection, preservation, and enhancement of the Nation's Heritage through five distinct concerns or treatments of archaeological and historic resources. These five concerns, Identification, Evaluation, Conservation, Preservation, and Interpretation are not mutually exclusive. In several situations a particular resource may appropriately be addressed from more than one perspective. For example, a given resource identified and subsequently evaluated may be determined significant (e.g. eligible for The National Register of Historic Places). Following analyses of potential adverse effects from such factors as erosion, construction, or adaptive re-use, Rock Island District Corps of Engineers cultural resource managers may conclude that a portion of the site can be protected through design modification of proposed facilities (preserved). However, it may be concluded that a segment of that site subjected to severe erosion cannot be protected. Thus a decision is made to recover, through controlled excavation, the threatened areas. This of course constitutes a conservation decision. Conservation may also be appropriately implemented to aid in the planning process. In this instance research is directed to planning goals rather than to mitigation of adverse effects. Finally, should the results of investigations yield cultural remains and data suitable for public enjoyment and education, RID-COE managers may elect to develop resource enhancement measures through the publication of brochures, popular reports, on-site signage, or on-site exhibits. Clearly these aspects of interpretation are the logical results of identification, evaluation, conservation, and preservation treatments.

It should be noted that no expressed concern has been

made for dissemination of information to the professional archaeological community. Archaeology by its very nature is the planned and methodical destruction of historic and prehistoric sites. The professional responsibility of the archaeologist is explicit. Destruction of a finite, nonrenewable resource requires that a comprehensive research design be formulated for collection and study of historic and archaeological data. Further, specific responsibilities for reporting and data management are placed upon the principal investigator directing archaeological studies. The National Advisory Council on Historic Preservation has provided detailed commentary relative to these responsibilities (1980). The following is excerpted from Treatment of Archaeological Properties: A Handbook:

Reports and Data Management

1. In order for recovered data to be useful, they must be made available to scholars and planners in usable forms. Generally speaking, the following products (other than physical specimens) are expected from a data recovery operation:

   A. a report or reports that describes the operation and its results, with reference to the research topics addressed by the operation;

   B. digested data in the form of tables, charts, graphs, computer software, etc.;

   C. raw data in the form of field notes, photographs, magnetic tapes, etc.; and,

   D. scholarly and other articles utilizing the results of the work for analytic or public-interpretive purposes.

2. All data recovery projects should result in a report or reports containing the reasons for the project, the data recovery plan, the methods employed in both field work and analysis, the data recovered, observations made, insights gained, conclusions reached, and a presentation of pertinent data. The report should meet contemporary professional standards, and should be prepared in accordance with the format standards set forth in 36 CFR.

Provisions should be made for disseminating the report. At a minimum, two copies of the report must be provided to the Department of the Interior pursuant to P.L. 93-291, Section 3(a), and 36 CFR Part 1210.5. In addition, agencies are encouraged to disseminate reports to the widest possible audience. Appropriate methods of dissemination include, but are not limited to, publication in scholarly journals, monographs, popular articles, books, and the National Technical Information Service, and presentation of papers at scholarly conferences. Agencies should provide a copy of each report to the State Historic Preservation Officer and other appropriate archives and research libraries.

3. Digested data should be stored in a manner that makes them readily retrievable for further study and analysis. Use of modern systems of information storage and retrieval is encouraged. Such systems should be as compatible as possible with those used by the SHPO and other agencies and institutions with potential uses for the data.

4. Raw data should be stored in a manner that ensures their long-term maintenance and availability, usually in an appropriate research institution (cf. 36 CFR Sec. 1210.4).

5. Although agencies are not necessarily responsible for developing or supporting the development of scholarly analytic articles, beyond those embodied in the report(s) on each data recovery operation itself, use of recovered data for such purposes should be encouraged.

Given these and other standards for reports and data management, professional interpretive needs relating to archaeological and historic resources at Coralville Lake are met by reports of investigations. In order to clarify and elaborate specific management goals and objectives, it is necessary to critically examine the five major management areas. This is accomplished in the ensuing discussion.

Identification:

In order to effectively manage any class of phenomena be they archaeological sites, endangered species, or mineral or soil resources, those vested with management responsibilities must have an accurate data base at their disposal. Prior to 1986, the range, nature, and distribution of cultural resources at Coralville Lake was unknown. Thus, decisions effecting cultural resources were often made on a case by case basis. This, in turn, required identification efforts on project-specific bases. In essence, this caused decisions to be made with only marginal understanding of the classes of cultural resources at Coralville Lake and resulted in substantial duplication of effort.

While compelling reasons may often be cited for conducting cultural resource identification on project specific bases, such efforts are often of limited utility and are not considered cost-effective. Further, project-specific identification often proceeds in the absence of regional research designs or regional baseline data. Significant studies had been completed at Coralville Lake (cf. Zalesky 1977, Schermer 1983, Zieglowsky and Zalesky 1981, and Emerson et al 1984) and resulted in the identification of 198 archaeological sites on Federal land. However, approximately thirds of these sites were not assigned a cultu classification or temporal identity. In addition, sur coverage had been uneven with several areas of bias (Overstreet and Stark 1985). Of particular note was the relatively intensive coverage in the eastern one-half of the Coralville project while the western one-half was virtually unknown. This serious limitation in the most basic management need, identification, seriously hindered cultural resources management at Coralville Lake. As a result, completion of identification and establishment of a manageable data base was assigned the highest priority.

Evaluation:

Few sites at Coralville Lake had been subjected to evaluation and the results of test excavations are important for specific localities (see for example Anderson 1971a, 1971b, Emerson et al 1984, Overstreet and Stark 1985). The very small sample of excavated sites, primarily from disturbed contexts and yielding few diagnostic artifacts was, and remains, another serious limitation. This limitation hinders the development of evaluation criteria to determine the significance of the archaeological and historic resource base as a whole, for various site classes, or even for individual sites. Because of this, evaluation was also an immediate priority for sound management at Coralville Lake.

Emerson et al (1984: 147-148) and Henning (1985) had already identified and formulated study units or research objectives directly and tangentially related to the Coralville Lake study area. Consistent with the Resource Protection Planning Process (RPPP), the broadest level of study units reflect classes of sites or properties within a broader regional context. These classes, in turn, can then be addressed from the perspective of their occurrence within the Iowa River drainage basin. Particular site clusters within or perhaps across more specific geomorphic/environmental contexts represent a more localized set of research questions and problems. Finally, site-specific or intra-site research objectives also needed to be defined.

The organization of study units or research objectives within this hierarchical framework is quite similar to a taxonomic classification system. In this manner one can proceed from the comprehensive to the specific, easily incorporate new research questions as they arise, and formulate evaluation criteria both within and between classes of sites and properties. Subsequent to completion of the identification phase at Coralville Lake and during the on-going

process of evaluation, endemic evaluation criteria can be developed and refined. King (1982) has outlined the objectives of the establishment of endemic evaluation criteria:

1. To cast the National Register Criteria for evaluation (36 CFR 60.6) into terms that are meaningful to the region in which the study area occurs, and

2. To evaluate expected historic property classes in these terms, but

3. To establish guidelines for recognizing representatives of each class, assigning specific properties to each class, recording properties, and evaluating their integrity, and

4. To maintain the flexibility to recognize the value of unexpected property types, should these appear during the implementation phase.

In summary, the evaluation phase of cultural resources management at Coralville Lake was designed to develop endemic criteria to determine the national, regional, and local significance of a given property or site. Once the level of significance is established through application of criteria and review, alternative management strategies can be applied.

Conservation:

Conservation is equated with expenditure of a portion of the resource base. Following identification and evaluation it may be determined that commitment of a portion or all of a site for either research or management objectives is warranted. For example, when weighed against other management needs and objectives it may not be feasible to preserve a particular property. Thus, the decision is made to recover an archaeological site. It may also be deter-

mined that conservation is an appropriate measure to resolve a significant limitation in the data base. In this instance management will have been enhanced by securing data heretofore unavailable and the results of conservation will be directly applicable to improving management practices. Conservation should also be considered for experimental purposes. Many sites at Coralville Lake cannot be demonstrated to be significant at the national, regional, or local level. Hence, they are not suitable candidates for either conservation or preservation measures. Nontheless, consideration should be given to experimental recovery (conservation) treatment that would enhance both research and management practices. Such experimental use might range from complete excavation of a small lithic scatter, evaluation of construction impacts, or the effects of long-term inundation of archaeological sites.

Any decision for conservation should include development of a formal research design which has been critically evaluated by RID-COE cultural resources specialists, the Iowa State Historic Preservation Officer, and other interested parties. Further, this decision to commit a nonreplaceable resource should be implemented with considerable rigor in theory, method, and technique tied to study units or explicit research questions and integrated within the evaluation framework.

Preservation:

Preservation in place is the major objective of the cultural resources management plan. RID-COE has as its most significant cultural resources responsibility preservation of the nation's archaeological and historic heritage. The underlying philosophy is long term protection and maintenance of the resource for future generations. As the disciplines of anthropology, history, paleontology, geology, and geography develop new methods and techniques of inquiry our capabilities to address such factors as past climate and landscape changes will be enhanced. These yet undeveloped

methods and techniques will provide for more comprehensive understanding and explanation of how past populations met the challenges presented by their dynamic natural and social worlds. For these reasons archaeological and historical resources are important to social and natural scientists, humanists, and to contemporary populations of diverse ethnic backgrounds and interests. Only through strong preservation measures will scholars of the future be able to study the past. For these reasons, a cultural resource allocated to a preservation strategy should be accorded the strongest levels of protection. Sites allocated to this strategy should only be committed for research purposes subsequent to the submission of a superior quality research design, and, only if it can be clearly demonstrated that the data cannot be secured from sites or properties assigned to other allocation strategies. Preservation where feasible, except in the most unusual circumstances, is the most desirable management alternative.

Interpretation:

As the previous discussions have indicated, not all archaeological and historical sites are worthy of preservation efforts. In addition, management or research needs may sometimes override the preservation ethic. When conservation is defined as the appropriate decision, interpretation for public education and enjoyment should be considered as part of the conservation alternative. In addition, sites or properties that lack integrity or fail to meet the endemic criteria of significance may still have high interpretive potential. In fact, consideration should be given to managing some sites primarily for their interpretive values. At this juncture the lay public derives few benefits from the expenditure of public funds for cultural resources management. Existing efforts consist of popular narratives and brochures, exhibits, and signage. At Coralville Lake, these three alternatives could be significantly improved.

Summary and Conclusions:

The major facets of cultural resources management at Coralville Lake have all been initiated, but to varying degrees. Identification has resulted in the documentation of some 266 archaeological sites. Several of these sites have been subjected to test excavations to determine their level of significance. Some sites, primarily owing to contemporary land-use, can be considered "preserved" though many others have been destroyed by landscape degradation ranging from erosion to agriculture. Currently, the major interpretation of Coralville cultural resources is limited to publications cited and the exhibit at the dam site administration building. The following management plan details necessary accomplishments to resolve existing limitations and implement effective long-term cultural resources management.

MANAGEMENT SYSTEM:

Subsequent to the development of the Resources Master Plan for Coralville Lake (Nuss 1976), approximately 266 archaeological sites have been identified. The occupational history of these sites spans some 10,000 years, and, such sites are distributed over an area encompassing some 24,800 acres (the limits of the maximum flood pool). Of additional importance is the fact that erosion and deposition, both during the Holocene and during the duration of project operation, have removed once-occupied land surfaces and buried others. Thus, effective cultural resource management requires sound knowledge of the three dimensional matrix in which archaeological sites occur, and, understanding of which landscape components have been removed by erosional forces. Further, these landscapes must be placed in a reasonably accurate chronological sequence to infer potential locations for buried archaeological sites. To this end, a geographic nformation system was developed as the most appropriate mechanism to control and manipulate data relating to a complex mosaic of different aged surfaces, some exposed and others buried, at the Coralville Lake project. The geographic information system also provides for constant monitoring and updating of cultural resources management applications which include identification, evaluation, conservation, preservation, and interpretation of archaeological and historic sites and properties. The management system incorporates the following elements.

(1) Project-wide base mapping:

Initial base mapping was implemented by digitizing U.S.G.S. 7.5' quadrangles encompassing the project limits and surrounding environs. The system employed was an Intergraph IGDS. In addition to topographic and cultural features, a series of coordinate systems were recorded for

cultural resource management purposes. These include: (1) Township, Range, and Section; (2) Universal Transverse Mercator Projection coordinates; and (3) a project-wide "Great Grid" based on 1000.0m units keyed to the UTM system. Other relevant project data digitized during the base map production include Corps of Engineers property boundaries for the Lake Coralville project, general resource management units, and locations of previously recorded archaeological sites.

Selection of UTM coordinates was not fortuitous. Because all archaeological sites that are nominated to the National Register of Historic Places must have their boundaries delineated in the UTM system, this conversion from legal description would have to be made in any account. Further, legal descriptions are quite cumbersome for small site reporting while UTM coordinates allow for precision in recording even isolated artifact finds, a common occurrence at Coralville Lake. Figure 1 depicts a segment of the base mapping exercise at a scale of 1"=2,000' (1:24,000).

(2) Survey Unit Mapping:

Subsequent to establishment of base maps, archaeological survey units were derived from existing geomorphic survey information and from the 1000.0m "Great Grid." Survey unit sample size was defined in 25 hectare blocks, essentially reflecting quadrants of the "Great Grid" blocks at Coralville Lake. These 25 hectare blocks were numbered sequentially to provide sampling units which were ultimately selected through use of a table of random numbers.

First stage sampling consisted of a stratified random sample of 20%. Sample stratification was based on existing geomorphic mapping units defined by Emerson et al (1984). These geomorphic units were delineated utilizing landforms, soils, and relief (Emerson et al 1984). However, because these geomorphic mapping units had been drawn on 7.5' quad maps precise sizes were unknown. To

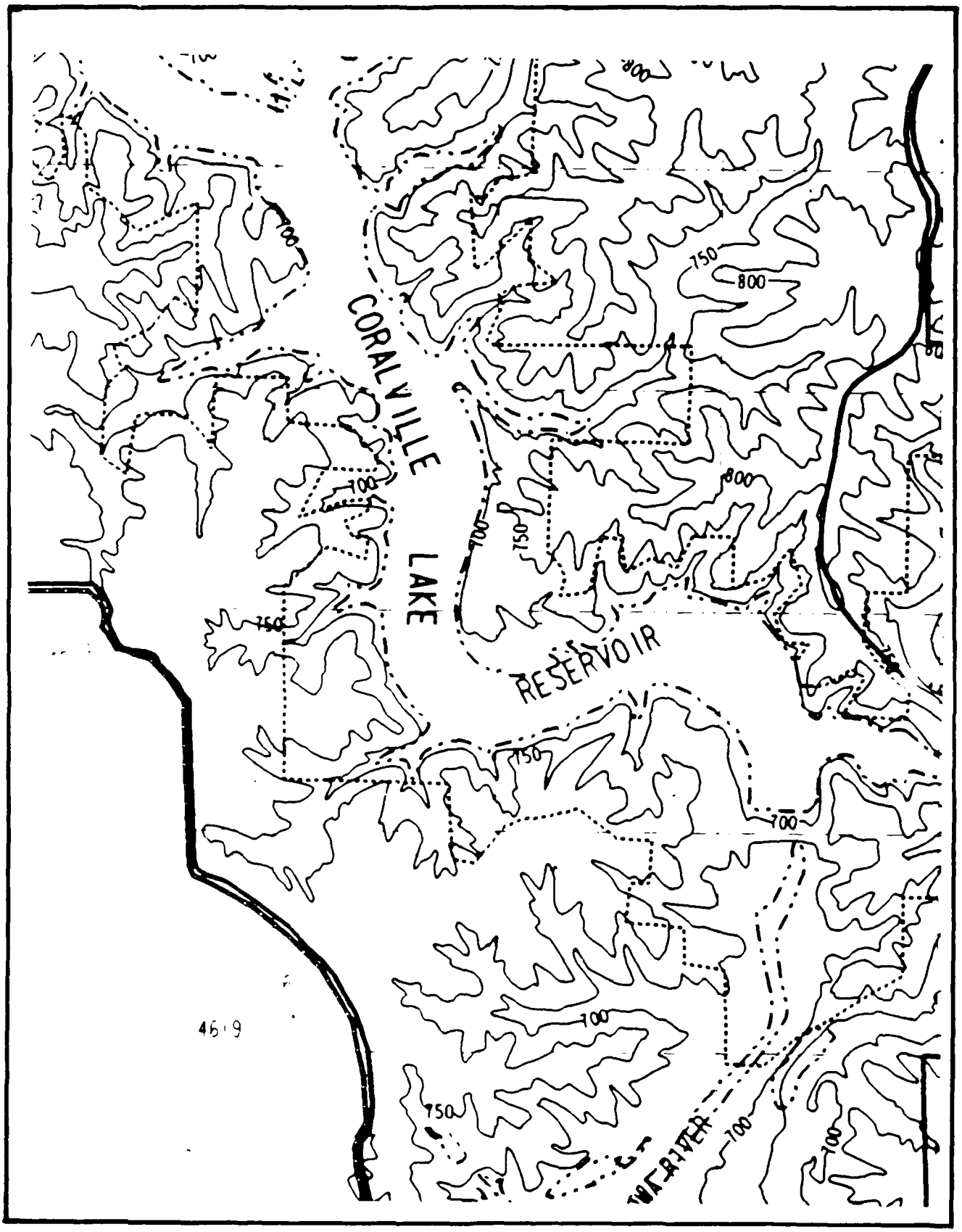


Figure 1: Segment of 1:24,000 CADD base map (See Volume VI, Atlas for complete project mapping).

rectify this problem the geomorphic mapping units were also digitized and the area for each unit calculated utilizing a survey and earth resources program developed by Donohue and Associates, Inc. The program (SPLOT) calculated the area within each of the seventeen (17) geomorphic mapping units listed in Table 2. Most sampling designs involving real estate tend to have some inherent biases which skew the sample to greater or lesser degree. One form of bias in our sample from Coralville Lake derived from the small and/or irregular nature of several of the geomorphic mapping units. In a few cases the area involved was sufficiently small so that a greater than 20% sample was surveyed for archaeclogical sites. In no case, however, was coverage of a geomorphic mapping unit less than 20%. Table 3 denotes the area of each GMU in hectares, the 20% sample fraction, and the total area actually surveyed.

Each 25 hectare sample unit investigated during the survey was recorded in the geographic information system. In addition, again through computer assisted drafting, a detail map was printed at a scale of 1"=600' (1: 7200). These maps include the boundaries of previously unreported sites, sites that were previously reported, and spot finds within a given sample unit. UTM coordinates were used to delineate site limits and to record spot locations. Figure 2 portrays a segment of the Coralville Lake project base map indicating the distribution and numbering system for sample survey units. Figure 3 depicts a typical detail, 1"=600' (1:7200) survey unit map, and, Figure 4 illustrates the base map exhibit key for locating detail maps within the project limits.

Second stage sampling consisted of biased survey coverage. This site survey task was specifically focused on various special use areas within the Coralville Lake project area. Such special use areas include lands leased for wildlife management, recreational facilities, reserve forest land, and project operations. As these management units or

TABLE 2: MAP LEGEND - PHYSICAL ENVIRONMENTS OF CORALVILLE LAKE
(From Emerson et. al. 1984)

NAME	SYMBOL
Iowan Surface	
Soils formed under forest:	
in thick aeolian sediments	SFA
in glacial till or a thin mantle of aeolian or erosional sediments and in underlying glacial till	SFT
Soils formed under savannah in a thin mantle of aeolian or erosional sediments and underlying glacial till:	SST
Soils formed under prairie in a thin mantle of aeolian or erosional sediments and in underlying glacial till:	SPT
Southern Iowa Drift Plain	
Soils formed under forest on valley slopes, hillsides, and interfluves:	
in thick aeolian sediments	PHA
in a thin mantle of aeolian sediments and in underlying glacial till or entirely in glacial till	PHT
Soils formed under forest in thick loess on prominent high lying ridgetops:	PSA
Physical environments occurring in both of the above landform regions	
Floodplains, alluvial fans, and footslopes:	F
Terraces:	
Lacking a mantle of aeolian sediments with soils formed under:	
forest	TLF
prairie	TLP
savannah	TLS
having a thick mantle of loess with soils formed under forest:	TAF
having a thick mantle of aeolian sediments with soils formed under prairie:	TAP
having at least a thin mantle of aeolian sediments with soils formed under savannah:	TAS
Undifferentiated in valleys of small streams:	TU
Altered Lands	
Limestone quarry:	XQ
Cut and fill:	XC

TABLE 3: CORALVILLE SURVEY COVERAGE (Hectares)

Geomorphic Mapping Unit	Area in Corps Boundary	Percentage	Sample (20%)	Area Surveyed
SFA	310	316	62	115 (37%)
SFT	9	0.1	2	9 (100%)
SST	5	0.06	1	5 (100%)
SPT	147	1.7	29	30 (20%)
PHA	882	10.24	177	240 (27%)
PHT	0	0	0	0
PSA	62	0.72	13	22 (35%)
F	4229	49.11	845	675 (16%)
TLF	0	0	0	0
TLP	1647	19.13	330	365 (22%)
TLS	304	3.53	61	164 (54%)
TAF	486	5.64	97	109 (22%)
TAP	490	5.69	98	160 (32%)
TAS	10	0.12	2	2 (20%)
TU	30	0.35	6	12 (40%)
XQ*	(114)			
XC	0			
	8611	99.99	1723	1858 (21.5%)

* not included in total

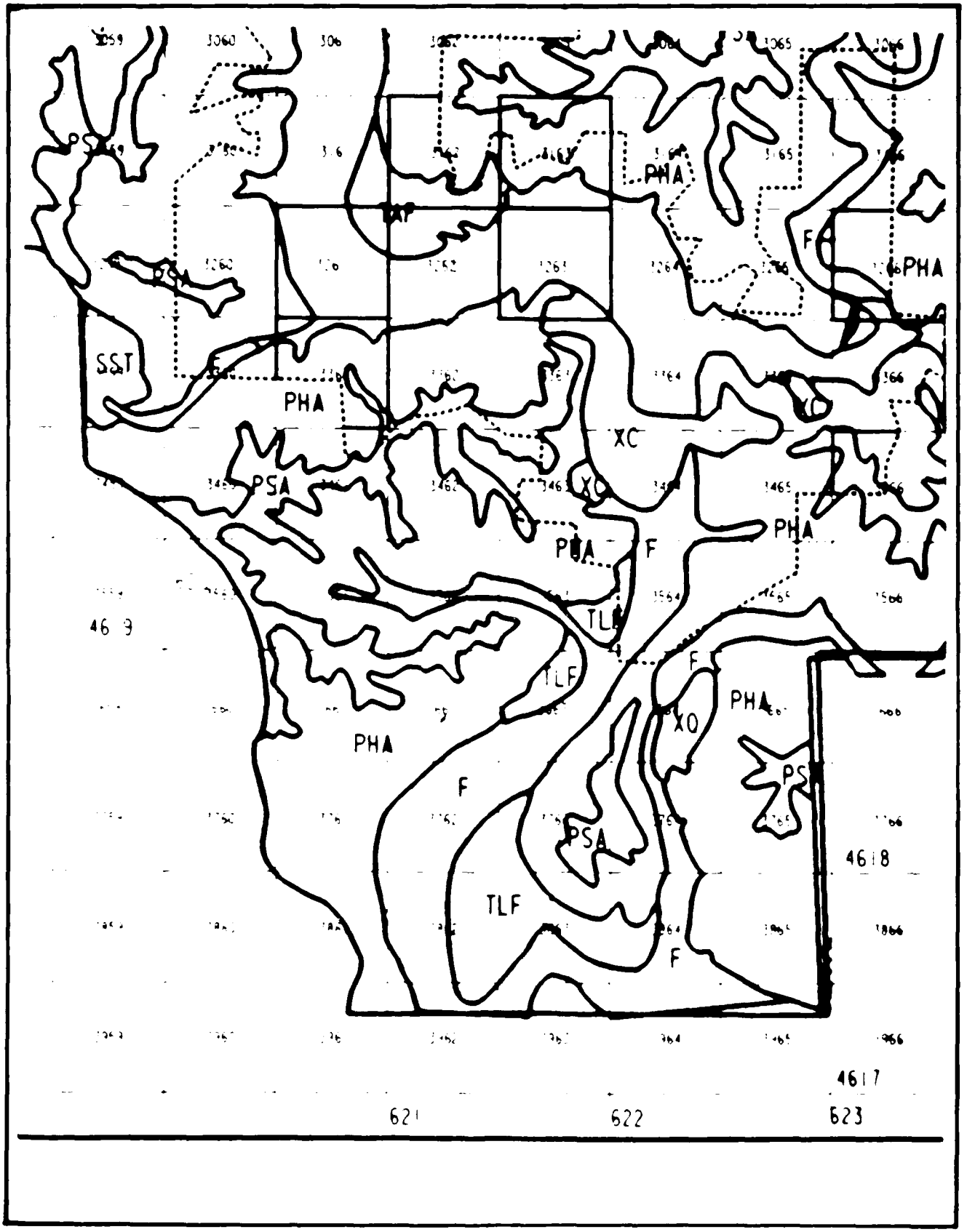


Figure 2: Geomorphic mapping units and sample [illegible] superimposed on base map [illegible] for [illegible] project [illegible].

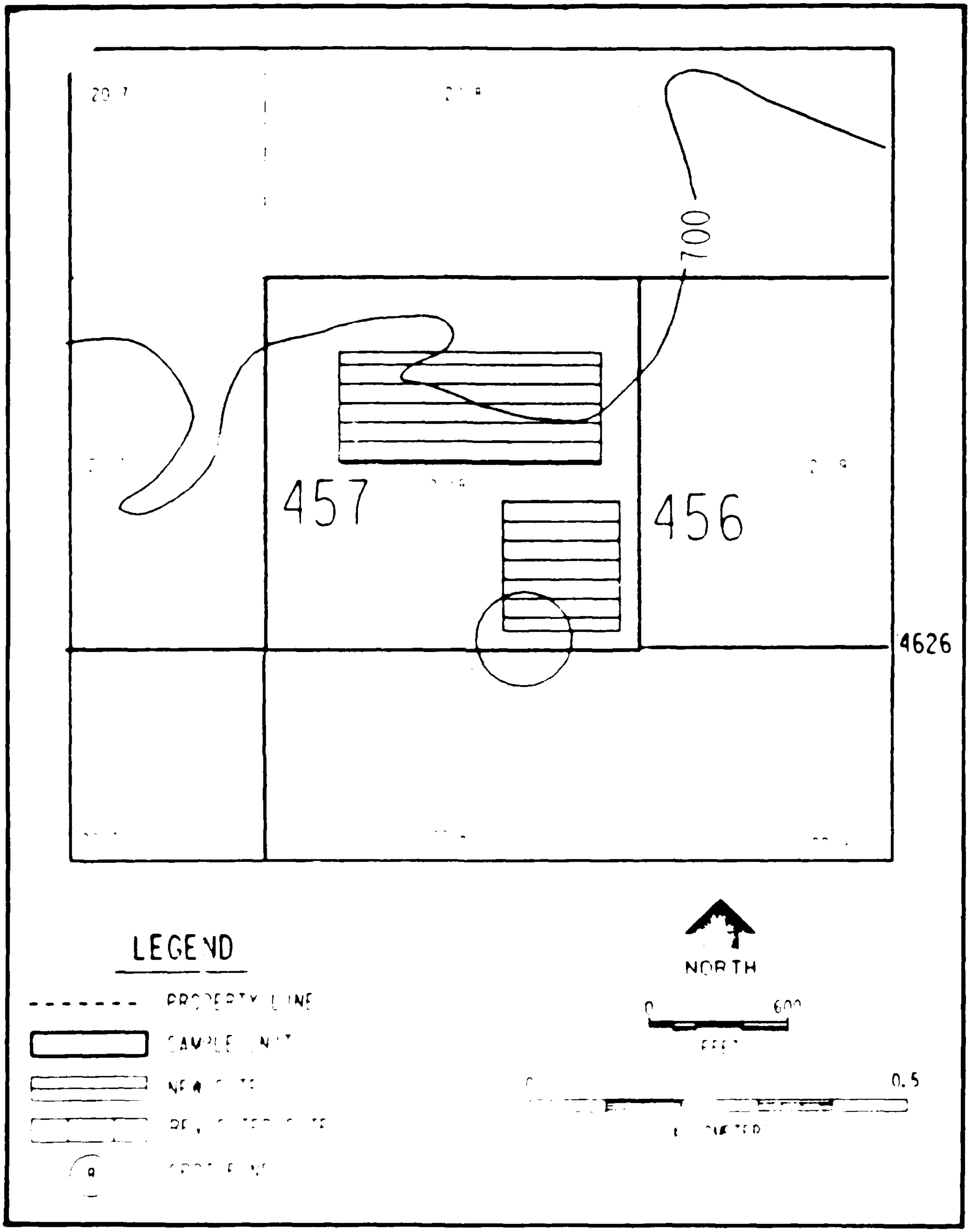


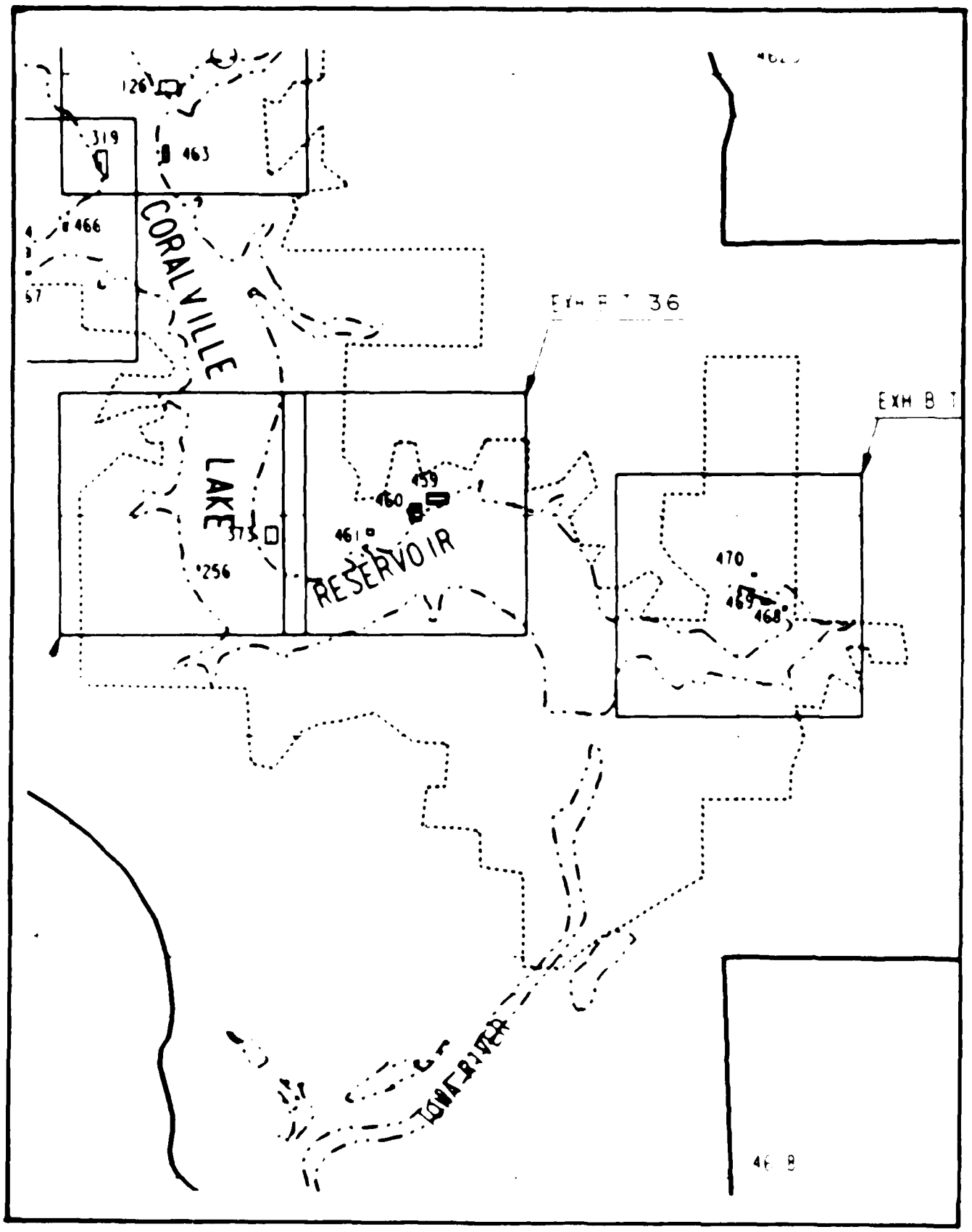
Figure 3: Example of detail map indicating archaeological site boundaries, [illegible], and 25 hectare survey units (See Data File, Volume [illegible], and Volume VI, Atlas).

zones reflect those areas of the Coralville Lake project that will be subjected to direct impacts from planned construction or other activities, it was necessary to conduct cultural resources inventory "out of sample." For the second stage sample 25 hectare survey units were again employed. The difference of course was in the biased rather than random selection. A sufficient number of contiguous sample units were inventoried until the limits of each special use area were encompassed within the surveyed blocks. As with the first stage sample, a detail map was generated for each survey unit that contained previously recorded sites, previously unrecorded sites, or isolated spot finds. Second stage survey was conducted at 14 individual special use localities encompassing approximately 5200 acres. At this juncture, combined archaeological survey at Coralville Lake comprised some 40.0% of the total project area.

(3) Site-specific Evaluations:

Prior to 1986 one hundred and nine archaeological sites [illegible] utilizing a variety of techniques ranging from formal test excavations, shovel probing, soil coring, and surface collection. The purpose of these evaluations was to determine the stratigraphic integrity or sub-surface potentials to secure sufficient information to assess a given site for eligibility for The National Register of Historic Places. Often the most compelling data were derived from knowledge of the age of the landscape on which artifacts were found. In many instances it was clear that landscape degradation had destroyed earlier landforms and artifacts existed as a lag component on an erosional surface. Such sites are of course easily located. However, in no instance did we encounter an archaeological site that met the criteria for inclusion in The National Register of Historic Places.

Where formal test excavations were conducted, UTM coordinates were recorded for each excavation unit. This


126
319
463
466
67
CORALVILLE
LAKE
RESERVOIR
EXHIBIT 36
EXHIBIT
459
460
461
373
256
470
469
468
IOWA RIVER
46 B

exercise will allow for precise relocation of excavation units that have been dug at the Coralville Lake project. Attempts to relocate excavation units of prior investigators did not meet with much success. However, Caldwell's 1956 excavations at a small rockshelter were located by remaining back-dirt piles from excavation. The precise location of other sub-surface investigations at the project site are less specific. Finally, all future investigations that entail sub-surface techniques will be recorded by UTM coordinates (x-y points for drill or bore holes and perimeter points for excavations) to ensure easy relocation by future investigators.

(4) Landscape Analyses and Chronology:

Initial landscape modeling at the Coralville Lake Project was primarily a library based endeavor. Very limited field work consisting of three Gidding's probe cores and cut exposure observations resulted in a relatively sound definition of upland geomorphic mapping units. However, in sedimentary environments, the floodplain and associated terraces of the Iowa River and in valleys of higher ordered streams, virtually no subsurface investigations had been conducted. To overcome these data base limitations a program of coring and backhoe trench excavation was implemented. Locations of bore holes, valley transects, and backhoe units again were recorded by UTM coordinates and placed within the GIS.

Chronological information derived from two sources. First, a radiocarbon assay of 20 organic enriched buried surfaces, or, of buried wood charcoal provided absolute chronology of buried landscapes. The second source of information was gleaned from the association of cultural materials including ceramics and stone tools that can be cross-dated from undisturbed archaeological contexts in the region. As well, the occurrence of middle-late Holocene artifacts on pre-Holocene surfaces has served as an important indicator to identify localities where substantial gaps in the Holocene stratigraphic record occur. In many

instances these gaps may be correlated directly with the project operation (e.g., shoreline erosional contexts at the reservoir), but in others, removal of landscapes is associated with climatic events during the middle and late Holocene.

Geomorphic investigations have also focused on localities where particular sedimentary processes have exempted landscapes from degradation. This, in turn, provides for identification of localities where we are able to predict that habitable surfaces of specific age remain intact and thus harbor high potential for discovery of undisturbed archaeological deposits. A prime example occurs along the northern margin of the project area where both steep and low angle alluvial fans have developed along the valley wall. Fan deposition, based on current radiocarbon assay data, was initiated by at least 4,000 years B.P. However, as one proceeds along the longitudinal axis of alluvial fans toward the valley wall, the probability for encountering earlier buried surfaces increases.

Anotner locale of site burial is potentially delineated in inter-dune depressions. On the southern margin of Coralville Lake a complex dune field has been identified. Radiocarbon assays demonstrate the potential for this locality to harbor intact surfaces that pre-date 4,000 B.P. As additional sub-surface investigations are conducted, our knowledge of the lateral extent, vertical placement on and in the contemporary landscape, and relative age of buried surfaces will be refined. The effectiveness of integrating new information, however, is dependent upon continuous updating of the geographic information system. Further, while there is great utility in assuring precise recording of existing data and rapid retrieval of such information, perhaps the greatest benefit lies in assessing limitations and planning future investigations.

System Capabilities:

The initial capabilities of the system are such that graphic and numeric data can be stored on 63 plan levels. A back-up file provides an additional 63 plan levels. To date, base mapping, archaeological site recording, detail mapping, and geomorphic mapping units entail utilization of 33 plan levels. An additional 7 plan levels have been reserved for broad spectrum planning and mapping including buildings, utilities, vegetation patterns, and various boundary systems such as easements, property lines, corporate limits, lease holdings and others. In any event, system capabilities are in no danger of being overloaded, even with the incorporation of non-cultural resource management applications. An anticipated life of 20-30 years is identified for the existing GIS for cultural resources management at the Coralville Project site (Overstreet, Smith, and Brucewicz 1985).

Summary and Conclusions:

The GIS established for managing the cultural resources of the Coralville Lake project has several distinct advantages when compared to past efforts at this locality. First, given the current federal professional services competitive solicitation procedures, contractors often vary. The benefits of those procedures are many, however, the process may result in different orientations and approaches being applied to archaeological and historical sites at Coralville Lake. By requiring adherence to the GIS format, all investigations will yield comparable data. This does not preclude the opportunity for differential interpretations of these data.

A second major benefit is the efficiency and ease with which one can manipulate an automated data base. Compliance reviews for pending construction projects, for vandalism cases, for monitoring erosion, or for other processes that can directly impact the sites we are responsible for preserving, are often tedious. With the existing system a

reviewer may rapidly scan a given project locality to determine the extent of previous survey. Having determined, for example, that the tract in question has been subjected to survey, reference is then made to the detail exhibit maps which are enumerated on the survey base map. The 1:7200 25 hectare map will provide the precise locations indicated by UTM coordinates of archaeological sites and isolated finds within the distinct survey unit(s).

Upon determining the site identification number and site limits, the reviewer then proceeds to the data file for context information. The data file will indicate the cultural component, summarize the materials recovered, identify any previous investigations, and, if the site has been evaluated, state its eligibility for the National Register of Historic Places. In effect, the GIS will reduce the process of evaluating potential impacts on cultural resources from hours (in some cases days) to approximately 15 minutes.

The landscape evolution model is of substantial utility in localities where survey has not been conducted. While this will require a more subjective consideration, a priori knowledge of disturbance from project operation or from Holocene climatic episodes will be important in determining the level of reconnaissance effort to determine the presence or absence of significant cultural resources. Finally, the known distribution of buried soil horizons, chronology of buried surfaces, and predictive model of site location will allow the reviewer to anticipate the type and relative age of expected habitation.

The third major benefit relates to long-term research goals. We will be unable to reconstruct past life-ways, Holocene environments, paleo-demography, or other related anthropological questions until undisturbed archaeological deposits are subjected to close scrutiny. Such undisturbed sites have yet to be identified at Coralville Lake. The landscape evolution and site distribution models enhance our

search by identifying relatively large tracts of land where prospects of discovery are slim. This reflects the identification of lost landscapes. At the same time, by narrowing the focus of investigations in areas where buried, stable surfaces occur, our chances for success are greatly increased. In summary, it can be seen that this GIS approach for large federal land holdings is an appropriate replacement for the more traditional stratified random sample strategy. This latter application assumes a two-dimensional universe, is fraught with substantial bias, and is generally inappropriate for alluvial valley settings such as those encountered at Coralville Lake.

MANAGEMENT PLAN:

The proposed management plan is designed in seven phases which will serve to meet the objectives of identification, evaluation, conservation, preservation, and interpretation of cultural resources at Coralville Lake. The inventory and evaluation phases of work have already been completed. Other phases are implemented but not complete, and the remaining aspects are under consideration for implementation. As a result, the plan is operational and can be considered complete. The results of these phases are encapsulated in the following discussion.

Phase O-Implementing Data Base Management:

Previous investigations at Coralville Lake have been of varying orientations and uneven quality (Emerson et al 1984, Overstreet and Stark 1985). As a result, the initial phase of the management plan had as its objective the organization and transformation of the extant data base. This effort was necessary to place existing information in a systematic framework so that past and future investigations would have, better comparability. Utilizing a computer-aided design and drafting system (CADD), base maps were developed for Coralville Lake from 7.5' U.S.G.S. quadrangles. The CADD system can store graphic and numeric data on 63 levels providing overlays in combinations of base information. The base map (see Atlas) is derived from legal description units, however, Universal Transverse Mercator grid systems were superimposed utilizing 100.0m increments. Other features, e.g., RID-COE managed lands, lease-holdings, recreation areas, locations of Coralville sites, geomorphic unit boundaries, topographic data, contemporary cultural features, or other attributes relating to cultural resources or management practices are incorporated as necessary (see Data files and Atlas).

Prior to implementation of Phase-O, all 198 known sites at Coralville Lake were plotted by legal description. Owing to irregularities in land surveys (see Emerson et al 1984, Vol. III: 3-4) site locations were imprecise. In addition, legal descriptions are inadequate for purposes of National Register nominations. Conversion to UTM coordinates aids in the evaluation process for cultural resources at Coralville Lake and allows for all sites at the reservoir to be placed within the framework of the metric grid. In turn, this grid was employed for sample unit selection for inventory work during Phase-I of the management plan.

CADD-Mapping:

The first aspect of CADD mapping was digitizing data from U.S.G.S. maps for storage and reproduction of data. Tables 4-6 note the design files assigned for attributes and data. Several levels were reserved for later addition of buildings, access roads, utilities, vegetation, or other management applications.

CADD can plot a drawing at any scale, providing maximum flexibility and can speed data retrieval. Base maps were plotted at a scale of 1":2,000' (1:24,000), and detail maps (refer to Figure 3) were constructed at a scale of 1":600' (1:7,200). The former scale was selected for its manageable size to incorporate attributes on a project-wide basis. The latter scale was chosen in order to provide a detailed representation of cultural sites or other features in an 8.5 by 11" format.

Evaluation of Existing Environmental and Cultural Resource Models:

The second aspect of the CADD mapping task was to evaluate previously existing environmental and archaeological/historical data from the perspective of comparability. Following this evaluation, the data were reorganized within the CADD framework. In addition, a series of cross-

TABLE 4: Coralville Lake Design File

CADD DATA LEVELS — DESIGN FILE
PHOTOGRAMMETRIC AND MAPPING PLANS

PLOT USE	LEVEL	CONTENTS
PLAN----------	1	U.T.M. CONTROL 2000 TEXT (120 LE-ROY)
PLAN----------	2	U.T.M. CONTROL 600 TEXT (120 LE-ROY)
PLAN----------	3	U.T.M. CONTROL GRID (WT=0, LC=6)
PLAN----------	4	STATE PLANE CONTROL 2000 TEXT (120 LE-ROY)
PLAN----------	5	STATE PLANE CONTROL 600 TEXT (120 LE-ROY)
PLAN----------	6	STATE PLANE CONTROL GRID (WT=0, LC=7)
PLAN----------	7	CONTOURS (INDEX) (100 LE-ROY,WT=2)(LINE WT=2,LC=0)
PLAN----------	8	CONTOURS (INTERMEDIATE) (LINE WT=0,LC=0)
PLAN----------	9	SPOT ELEVATIONS (100 LE-ROY,WT=0) (TEXT SIZE FOR 2000 SCALE, NO ADJ. FOR 600 SCALE)
PLAN----------10		DIGITIZER ALIGNMENT MONUMENTS (CELL=GRID, AS=2000)
PLAN----------11		ROADS (AP=DRIVE, PS=2000)
PLAN----------12		*BUILDINGS, WINDMILLS, TOWERS
PLAN----------13		RAILROAD TRACKS (AP=RAILLN, PS=2000)
PLAN----------14		*UTILITY POLES, SIGNS
PLAN----------15		*STRUCTURES, CULVERTS, FENCES
PLAN----------16		*MANHOLES, VALVES. F.H.
PLAN----------17		*DRIVEWAYS, GUARDRAIL, R.R. SIGNALS
PLAN----------18		*TREES, BUSHLINE, ORCHARD, PINES
PLAN----------19		STREAM LINE, LAKES (WT=4, LC=6) HIGH WATER POOL
PLAN----------20		2000 NORTH ARROW (CELL=NORTH)
PLAN----------21		600 NORTH ARROW (CELL=NORTH)
PLAN----------22		
PLAN----------23		*EXISTING LAND BOUNDARIES: (WT=1,LE-ROY=100 @ 2000 SCALE, NO TEXT ADJ. FOR 600 SCALE.) EXISTING R/W EXISTING EASEMENTS PROPERTY LINES PROPERTY OWNERS STATE BOUNDARY LINE CORPORATE LIMITS COUNTY LIMITS LOT/OUTLOT LINES & NUMBERING SUBDIVISION NAMING
PLAN----------24		
PLAN----------25		

* Levels reserved for this information, but will not be added to file as part of this mapping contract.

TABLE 4 : Coralville Lake Design File (cont'd)

CADD DATA LEVELS PHOTOGRAMMETRIC AND MAPPING PLANS	DESIGN FILE	
PLAN----------26	2000 TEXT FOR LEVEL 27 (LE-ROY=140, WT=2)	
PLAN----------27	SECTION NUMBERS, TN & RN LINES	
PLAN----------28	600 TEXT FOR LEVEL 27 (LE-ROY=140, WT=2)	
PLAN----------29		
	GEOMORPHIC UNITS	

PLAN----------30	"PSA" AREA BOUNDARY	(WT=6,LC=0)
PLAN----------31	"SPT" AREA BOUNDARY	(WT=6,LC=0)
PLAN----------32	"TU" AREA BOUNDARY	(WT=6,LC=0)
PLAN----------33	"XC" AREA BOUNDARY	(WT=6,LC=0)
PLAN----------34	"TLS" AREA BOUNDARY	(WT=6,LC=0)
PLAN----------35	"SST" AREA BOUNDARY	(WT=6,LC=0)
PLAN----------36	"F" AREA BOUNDARY	(WT=6,LC=0)
PLAN----------37	"SFA" AREA BOUNDARY	(WT=6,LC=0)
PLAN----------38	"TAF" AREA BOUNDARY	(WT=6,LC=0)
PLAN----------39	"PHA" AREA BOUNDARY	(WT=6,LC=0)
PLAN----------40		
PLAN----------41		
PLAN----------42		
PLAN----------43		
PLAN----------44		
PLAN----------45		
PLAN----------46		
PLAN----------47		
PLAN----------48		
PLAN----------49		
	CULTURAL SITES	

PLAN----------50	CULTURAL SITE BOUNDARY	
PLAN----------51		
PLAN----------52		
PLAN----------53		
PLAN----------54		
PLAN----------55		
PLAN----------56		
PLAN----------57		
PLAN----------58		
PLAN----------59	BORDER SHEET CELLS	
PLAN----------60	2000 CUT SHEET LIMITS	(WT=4, LC=3)
PLAN----------61	600 CUT SHEET LIMITS	(WT=4, LC=3)

TABLE 5: Coralville Lake Reference File No. 1

CADD DATA LEVELS
PHOTOGRAMMETRIC AND MAPPING PLANS

REFERENCE FILE NO. 1

PLOT USE	LEVEL	CONTENTS
PLAN----------	1	
PLAN----------	2	
PLAN----------	3	
PLAN----------	4	
PLAN----------	5	
PLAN----------	6	
PLAN----------	7	
PLAN----------	8	
PLAN----------	9	
PLAN-----------	10	
PLAN-----------	11	
PLAN-----------	12	
PLAN-----------	13	
PLAN-----------	14	
PLAN-----------	15	
PLAN-----------	16	
PLAN-----------	17	
PLAN-----------	18	
PLAN-----------	19	
PLAN-----------	20	
PLAN-----------	21	
	22	
PLAN-----------	23	
	24	
	25	

TABLE 5: Coralville Lake Reference File No. 1 (cont'd)

CADD DATA LEVELS
PHOTOGRAMMETRIC AND MAPPING PLANS

REFERENCE FILE NO. 1

PLAN----------26
PLAN----------27
PLAN----------28
29

GEOMORPHIC UNITS

PLAN----------30 "PSA" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------31 "SPT" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------32 "TU" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------33 "XC" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------34 "TLS" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------35 "SST" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------36 "F" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------37 "SFA" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------38 "TAF" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------39 "PHA" AREA 2000 TEXT (LE-ROY 140, WT=2)

40
PLAN----------41
PLAN----------42
PLAN----------43
PLAN----------44
PLAN----------45
PLAN----------46
PLAN----------47
48
49

CULTURAL SITES

PLAN----------50 2000 SCALE TEXT
PLAN----------51
PLAN----------52
PLAN----------53
PLAN----------54
PLAN----------55
PLAN----------56
PLAN----------57
58

PLAN----------59
PLAN----------60
PLAN----------61

TABLE 5: Coralville Lake Reference File No. 1 (cont'd)

CADD DATA LEVELS
PHOTOGRAMMETRIC AND MAPPING PLANS

REFERENCE FILE NO. 1

PLAN----------26
PLAN----------27
PLAN----------28
29

GEOMORPHIC UNITS

PLAN----------30 "PSA" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------31 "SPT" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------32 "TU" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------33 "XC" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------34 "TLS" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------35 "SST" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------36 "F" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------37 "SFA" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------38 "TAF" AREA 2000 TEXT (LE-ROY 140, WT=2)
PLAN----------39 "PHA" AREA 2000 TEXT (LE-ROY 140, WT=2)

40
PLAN----------41
PLAN----------42
PLAN----------43
PLAN----------44
PLAN----------45
PLAN----------46
PLAN----------47
48
49

CULTURAL SITES

PLAN----------50 2000 SCALE TEXT
PLAN----------51
PLAN----------52
PLAN----------53
PLAN----------54
PLAN----------55
PLAN----------56
PLAN----------57
58

PLAN----------59
PLAN----------60
PLAN----------61

TABLE 6: Coralville Lake Reference File No. 2

CADD DATA LEVELS
PHOTOGRAMMETRIC AND MAPPING PLANS

REFERENCE FILE NO. 2

PLOT USE	LEVEL	CONTENTS
PLAN----------	1	
PLAN----------	2	
PLAN----------	3	
PLAN----------	4	
PLAN----------	5	
PLAN----------	6	
PLAN----------	7	
PLAN----------	8	
PLAN----------	9	
PLAN-----------	10	
PLAN-----------	11	
PLAN-----------	12	
PLAN-----------	13	
PLAN-----------	14	
PLAN-----------	15	
PLAN-----------	16	
PLAN-----------	17	
PLAN-----------	18	
PLAN-----------	19	
PLAN-----------	20	
PLAN-----------	21	
	22	
PLAN-----------	23	
	24	
	25	

TABLE 6: Coralville Lake Reference File No. 2 (cont'd)

CADD DATA LEVELS
PHOTOGRAMMETRIC AND MAPPING PLANS

REFERENCE FILE NO. 2

PLAN-----------26	
PLAN-----------27	
PLAN-----------28	
29	
	GEOMORPHIC UNITS
PLAN-----------30	"PSA" AREA 600 TEXT (LE-ROY 140, WT=2)
PLAN-----------31	"SPT" AREA 600 TEXT (LE-ROY 140, WT=2)
PLAN-----------32	"TU" AREA 600 TEXT (LE-ROY 140, WT=2)
PLAN-----------33	"XC" AREA 600 TEXT (LE-ROY 140, WT=2)
PLAN-----------34	"TLS" AREA 600 TEXT (LE-ROY 140, WT=2)
PLAN-----------35	"SST" AREA 600 TEXT (LE-ROY 140, WT=2)
PLAN-----------36	"F" AREA 600 TEXT (LE-ROY 140, WT=2)
PLAN-----------37	"SFA" AREA 600 TEXT (LE-ROY 140, WT=2)
PLAN-----------38	"TAF" AREA 600 TEXT (LE-ROY 140, WT=2)
PLAN-----------39	"FHA" AREA 600 TEXT (LE-ROY 140, WT=2)
40	
PLAN-----------41	
PLAN-----------42	
PLAN-----------43	
PLAN-----------44	
PLAN-----------45	
PLAN-----------46	
PLAN-----------47	
48	
49	
	CULTURAL SITES
PLAN-----------50	600 SCALE TEXT
PLAN-----------51	
PLAN-----------52	
PLAN-----------53	
PLAN-----------54	
PLAN-----------55	
PLAN-----------56	
PLAN-----------57	
58	
PLAN-----------59	
PLAN-----------60	
PLAN-----------61	

tabulations were developed for archaeological survey coverage, existing and new site information, site functions, cultural affiliations, current site status (e.g., flooded, destroyed, intact, etc.), and distributions of sites and components by geomorphic and topographic settings (Refer to Tables 1-7 Overstreet and Stark 1985).

Integration of Future Data Collection:

Having completed the CADD mapping of natural and cultural features at Coralville Lake within the UTM grid within geomorphic features, future site information will be recorded in a like manner. As more comprehensive data are available, following Phase I-VII task completion, management will be dramatically enhanced. Tabulations of the data by specific archaeological component, by elevation, geomorphic setting, study unit, allocation strategy, or by as yet undefined correlations can be readily reproduced. Virtually any line of inquiry can be pursued. For example, one could rapidly identify all late Woodland sites that have yielded ceramics and faunal materials and are situated within particular environmental contexts.

Analyses of management impacts, for example, pool level raises or agricultural leases, can be rapidly evaluated. With regard to monitoring of site destruction by erosion or other agencies, additional potentials are brought to bear. Erosion extent can be plotted on the detail maps for each locality and periodically updated. Finally, sites categorized within conservation, preservation, or interpretation allocation strategies can be portrayed on individual map files. Now that Phase-0 has been completed (Overstreet and Stark 1985a), integration of future efforts at Coralville Lake will be much less problematical than in the past.

Phase I-Identification:

While more than 266 archaeological and historic sites had been recorded by various investigators at Coralville

Lake, the site arrays at the inception of the current studies had limited planning utility. As noted, investigations were conducted with varying orientations and were not systematic. Several areas of bias have been noted by Emerson et al (1984) and Overstreet and Stark (1985a). The most significant bias was the focus of investigations in the eastern one-third of the project area at eroded shorelines.

To refine the understanding of actual site distributions within the Coralville project locality, RID-COE issued Contract No. DACW25-84-C-003. As part of this contract, a stratified random sample was conducted. Utilizing the controls developed during Phase-O of this management plan, a series of 25.0 hectare blocks were subjected to 100% surface survey coverage. The survey universe was stratified by applying the geomorphic landscape features defined by Finney (Emerson et al 1985). Within each geomorphic feature, area was calculated by CADD and a 20% random sample was drawn from within each stratum.

A total of 64 previously unrecorded sites were identified during the Phase I sample survey (Overstreet and Stark 1985a). Because this identification was conducted in a controlled and systematic manner, we now have a representative portrayal of site numbers and distribution at Coralville Lake. However, it should be noted that two areas of significant bias still remain to be resolved. First, because some of the geomorphic features defined by Finney (Emerson et al 1985) are of very limited extent, they were subjected to a 100% sample. Thus, archaeological and historic sites in the 100% sample units are over-represented. The second area of bias derives from the level of investigations conducted by Emerson et al (1985). No efforts were made to identify contexts in which buried sites can be expected. Second, a complex terrace and floodplain system was treated as a single landscape category. This means that sites located within the category

"F" (floodplains, alluvial fans, and footslopes) may actually be situated on low or intermediate terraces. Means to resolve this limitation have been addressed by RID-COE by Solicitation Number DACW25-85-R-0028, Geomorphological/ Stratigraphic Investigation of Coralville Lake Region, Iowa. Successful completion of this contract has resolved the existing deficiencies in the Phase I Identification Survey. (For a comprehensive discussion of the Phase I Identification Survey see Overstreet and Stark 1985a).

Phase II-Identification:

Completion of the Phase I stratified random sample survey provides for realistic appraisal of the true number and distribution of cultural resources at Coralville Lake. However, this identification phase was conducted without consideration of potential site destruction. Phase II Identification is designed to evaluate the potential for site destruction at Coralville Lake from proposed development plans.

Under a modification of Contract No. DACW25-84-C-0033, Great Lakes Archaeological Research Center, Inc. has conducted 100% survey of special use areas at Coralville Lake (Overstreet and Stark 1985b). This is purposely biased survey conducted for specific management reasons. The results of this investigation, completed during the summer of 1985 have identified any adverse effects on cultural resources from proposed development. As noted in the specifications of the contract modification (4.5):

> The overall objective is to identify sensitive areas that require management actions such as stabilization, protection from vandalism, or further investigations. It is anticipated that the total developed acreage under this modification can be considered non-sensitive through adequate investigations and become available for future actions without the need for additional archaeological investigations. The exception to this would be unanticipated resources found during construction. This would eliminate the need for the many duplicative, small-scale survey efforts currently being done.

Results from the recreation area surveys have been incorporated within the established CADD system to include both areas surveyed and specific locations of any identified resources. Detailed summaries of archaeological survey of the special use areas at Coralville Lake may be found in Overstreet and Stark (1985b). The conclusions of intensive survey of 1170 ha. are as follows:

Turkey Creek: This special use area is allocated to recreational activities including parking lots, access roads, a "Frisbee Golf Course" and other related facilities. The area encompasses 41 acres, 11 of which are listed as developed. No archaeological sites were found here and it was determined that the area had been subjected to extensive cut and fill activities.

Tailwater West: Situated directly west of the Coralville Lake Dam, Tailwater West is developed as a trailer camping area and has associated facilities consisting of roads, parking lots, and sanitary facilities. The area totals 14 acres of made-land. The special use area harbors no archaeological sites and has no archaeological potential.

Tailwater East: This seven acre tract is intensively developed. No undisturbed surfaces exist here. Archaeological survey identified no potentially significant cultural resources.

Cottonwood: This 6 acre tract is allocated to recreation use with camping pads and washroom facilities representing the major sources of previous impacts. With the exception of a small alluvial fan, the site harbors no archaeological potential. Any future development plans that would impact this small fan where a buried paleosol has been identified should be subjected to further investigation (see Overstreet and Stark 1985b: 9-11, 48).

West Overlook: West Overlook is a 61 acre site, 26 acres of which are developed for beach, parking lot, tent

pads, picnic areas, and a boat ramp. Cut and fill activity has extensively modified the locality, and, archaeological survey revealed no evidence of historic or prehistoric archaeological sites. No further work is recommended at this special use area.

Linder Point: Linder Point is utilized primarily for tent and trailer camping. No archaeological data were recovered through combined methods of pedestrian survey, shovel probing, and soil coring. Site 13 JH 360 (a single ceramic crumb) could not be relocated. This site is not considered eligible for the National Register of Historic Places and no further cultural resources investigations are recommended for Linder Point. Four of a total of 95 acres have been developed.

Squire Point: This locality is largely undeveloped. Previous surveys located two sites here, 13 JH 361 and 256, however, these sites have been destroyed by erosion (Overstreet and Stark 1985a, 1985b, 15-16). No further survey investigations are recommended at Squire Point.

Sugar Bottom: This intensively used recreation area has been subjected to archaeological survey on several occasions. Twenty-one archaeological sites have been reported within the 780 acre tract of which 77 acres are listed as developed. Field checks confirm destruction of 13 JH 55, 106, 115, 117, 124, 125, 126, 202, 234, 238, 257, 262, 298, 309, 385, and 422 (Overstreet and Stark 1985a, 1985b: 16-17, 50-51, Emerson 1984: Vol. II). Two sites, JH 359 and 425, were evaluated for National Register eligibility. Future plans for development will have no adverse effects on the cultural resources data base. No additional survey or evaluation investigations are recommended at Sugar Bottom.

Mid-River Public Use Area: Comprised of 11 developed and 2 undeveloped acres, Mid-River is a small park-like setting with picnic grounds, boat ramp, and an adjacent private marina. Previously reported site 13 JH 27 is

confirmed as a lag deposit owing to extensive erosion at this locality. An additional site, recorded as 13 JH 536 is the burned and bulldozed remnants of a modern farm outbuilding. Neither site is eligible for the National Register of Historic Places. No additional investigations relative to cultural resources are warranted for the Mid-River Public Use Area.

Curtis Bridge: Recent erosion has stripped surface soils from this 9 acre tract. The total area is listed as developed, including cut and fill activity related to bridge construction. Survey revealed no evidence of historic or prehistoric archaeological sites. A previously reported site 13 JH 27 (Zeiglowsky and Zalesky 1981) is assumed to have been destroyed. No further investigations are recommended.

Sandy Beach: This large recreational complex totals 642 acres, 612 of which are identified as developed. Facilities here include camping, swimming, boat launching, and picnic areas. Several archaeological sites had been identified and evaluated prior to the implementation of the identification phase of the management plan. These sites include 13 JH 43, 108, 146, and 396. None of these sites is considered eligible for the National Register of Historic Places (Overstreet and Stark 1985b: 23-28; Overstreet, Lurenz, and Rosen 1986). No further investigations are recommended at Sandy Beach unless deep excavations are contemplated. It is possible that pre-Woodland surfaces remain intact beneath the dune field at this location. However, we were unable to penetrate the coarse sediments beyond a depth of 2.0m. No buried surfaces were encountered within that 2.0m of sand. However, the potential remains for earlier Holocene surfaces beneath the dunes, or, in inter-dune depressions cannot be discounted.

Mehaffey Bridge: This special use area consists of 20 developed acres situated on a severely eroded loess capped hillslope that dips to the Iowa River. All

archaeological sites reported here consist of lag deposits, their context having been destroyed by erosion. This includes site 13 JH 478. No further investigations relating to cultural resources are recommended for Mehaffey Bridge special use area.

Lake MacBride State Park: Lake MacBride State Park consists of 1,117 acres, 200 of which are identified as developed, leased to the State of Iowa Conservation Commission. A total of six archaeological sites are recorded within the Park boundaries. Of these sites, 13 JH 47, 140, 334, 409, and 492, are not considered eligible for The National Register of Historic Places. Future investigations at Lake MacBride State Park should be governed by an MOA between the Corps of Engineers and the Iowa Conservation Commission. Finally, one site, 13 JH 272 has been evaluated and found to be a significant cultural resource (Overstreet, Lurenz, and Rosen 1986).

Hawkeye Wildlife Area: The Hawkeye Wildlife area, as this appellation suggests, is largely undeveloped. The tract comprises some 13,000 acres which are managed under lease arrangements with the Iowa Conservation Commission. Survey was restricted to the Hawkeye Wildlife Refuge, a sub-unit of the larger Wildlife Area. Survey units within the Hawkeye Wildlife Area, and for that matter all areas surveyed at Coralville Lake, are indicated on the survey unit map within the CADD atlas. Archaeological sites 13 JH 527, 532, 534, and 535 are not eligible for listing on the National Register of Historic Places. While the specific environs of the Hawkeye Wildlife Refuge do not harbor potentially significant sites, the broader region of the Hawkeye Wildlife Area contains several localities where buried soils (paleosols) have been identified. These sedimentary environments (see Anderson and Overstreet 1985) should be subjected to further investigations. To ensure that such investigations are conducted within the framework of the geographic information system consistent with the

Cultural Resources Management Plan, an MOA should be developed with the Iowa Conservation Commission for leased lands at the Hawkeye Wildlife Area.

Summary and Conclusions:

All special use areas with the exception of the 13,000 acre Hawkeye Wildlife Area have been subjected to intensive inventory and a significant number of sites have been evaluated for the National Register of Historic Places. Iowa State Historical Department, Office of Historic Preservation has reviewed this intensive investigation (Overstreet and Stark 1985b) and has provided the following conclusions: (1) no further work is recommended for Tailwater West, Tailwater East, West Overlook, Linder Point, Mid-River Park, Curtis Bridge, Mehaffey Bridge, and the Hawkeye Wildlife Refuge. Further recommendations for Turkey Creek, Cottonwood, Squire Point, Sandy Beach, Lake MacBride State Park, and the unsurveyed portions of the Hawkeye Wildlife Area are consistent with those specified in Overstreet and Stark (1985b) and the preceding discussion. Finally, it is recommended that the Corps of Engineers and the Iowa Conservation Commission develop a memorandum of agreement for leased lands at Coralville Lake.

Phase III - Identification:

Phase III identification was designed to rectify existing limitations in the geomorphic/stratigraphic data at Coralville Lake. Essentially, this Phase, conducted under the auspices of Solicitation No. DACW25-85-R-0028 identified buried Holocene landscapes where archaeological sites can be expected to occur. In deep sedimentary environments tradit onal applications of archaeological survey techniques are adequate to locate archaeological sites. The landscape model which focuses on buried (or removed) surfaces dating between 12,000 B.P. and the present is essential for effective management at Coralville Lake.

Refinement of Holocene stratigraphy will enhance management by defining localities in which sites can be expected to occur, but for the most part cannot be identified through surface surveys. The results of Phase III - Identification are presented in Anderson and Overstreet 1986.

INVENTORY SUMMARY:

Sample survey and biased survey represent a combined 40 percent of the land surface at the Coralville Lake Project. In addition, sub-surface investigations designed to resolve limitations in previously existing geomorphic mapping units have been completed. This Phase III identification is the subject of a very detailed report prepared by Jeffrey D. Anderson (see Volume II of the Management Plan). Essentially, the geomorphic investigation provides a necessary element of the predictive model of site location, i.e., areas of high potential where intact surfaces area buried by sedimentary processes, and, localities where intact sites are not likely to be found, i.e., where shoreline erosion has stripped the Holocene matrix and artifacts remain as a lag deposit on an older surface. Information derived from these three inventory Phases was utilized to generate Table 7, a current inventory summary.

The summary detailed in Table 7 has several limitations. First, no assumptions were made with regard to previously reported sites that were not "ground-truthed" during the Phase I-III inventory process. One of the reasons for not making assumptions is that sites which have been visited on various occasions often have conflicting reported research values. For example, 13 JH 367 was identified as having been characterized by severe erosion in 1981 and only moderate erosion in 1983. Site 13 JH 394 is indicated as presently in forest cover and purportedly has never been plowed. Review of historic air photographs and detailed topographic maps suggests that this stability is questionable. Nonetheless, I am reluctant to draw such conclusions without the benefit of an on-site reconnaissance.

Many of the sites listed in Table 7 contain inconsistencies. Further, most of them are not very useful

TABLE 7: CURRENT INVENTORY SUMMARY

Key to Table 7:

Recorder:

WH:	Wheeler	**Z&Z:**	Zalesky & Zieglowsky
AA:	Adrian Anderson	**S:**	Schermer
R:	Ruppe	**W&T:**	Weichman & Tandarich
McK:	McKusick	**W:**	Weichman
C:	Caldwell	**T:**	Tandarich
M:	Miller	**SP:**	Spriestersbach
E:	Emerson, et al	**K:**	Krizan
P:	Perry	**Z:**	Zalesky
LA:	Abbott	**L:**	Lewis
GL:	Great Lakes Arch. Research Center, Inc.		

Identified Component:

P:	PaleoIndian	**EW:**	Early Woodland
EA:	Early Archaic	**MW:**	Middle Woodland
MA:	Middle Woodland	**LW:**	Late Woodland
LA:	Late Archaic	**W:**	"General" Woodland
A:	"General" Archaic	**O:**	Oneota
UNK:	Unknown	**PH:**	Proto-Historic
H:	Historic	**MO:**	"Modern" Historic (recent)

Site Type/ Function:

M:	Mound (s)	**LS:**	Lithic Scatter
C:	Camp	**V:**	Village
H:	Habitation	**Q:**	Quarry
TS:	Trash Scatter	**UNK:**	Unknown
CS:	Chipping Station	**O:**	Occupation
WS:	Workshop	**FS:**	Farmstead
HW:	Windmill		

Curation Repository:

SM:	Smithsonian	**OSA:**	Office of the State Archaeologist
UI:	Univ. of Iowa		
HD:	Iowa Historical Department	**UNK:**	Unknown
		GL:	Gt. Lakes Archaeological Research Center, Inc.
PRIVATE:	Artifacts in hands of collectors		

Agency Determining Elegibility for National Register of Historic Places:

R:	Rock Island District, Corps of Engineers
S:	Iowa State Historic Preservation Officer
K:	Keeper of the National Register

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY

Site # 13JO[illegible]	Recorder	Up-date Reports	Ident. Comp	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
-	Wh.	E.	W, A-O	V, M		x		x		Sm.	Inundated	1.2.4.7(1), No Mgt.
3	Wh.	C.,E.	W	M, H		x		x		Sm.	Completely excavated	1.2.4.7(1), No Mgt.
26	AA.	Z., E., GL.	EW, O	H	x			x		OSA,GL.	Inundated	1.2.4.7(1), Field Check*
27	Z.	GL.	EW	H	x			x		Private (Zalesky)	Lag deposit	1.2.4.7(1), No Mgt.
29	R.	M, W&T, E., GL	Unk.	Unk.		x		x		OSA, GL	Could not relocate	1.2.4.7(1), No Mgt.
30	Z	S., Z&Z, Z., GL	LW, A	H		x		x		OSA, Private	Lag deposit	1.2.4.7(1), No Mgt.
31	Z	Z&Z, E., GL.	E-MW, A	H	x			x		Private, GL	Lag deposit	1.2.4.7(1), No Mgt.
33	Z	M, Z&Z, E., GL	M-LW	H	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1), No Mgt.
36	Z	Z, Z&Z, GL	E-LW, A	H	X			x		Private, GL	Lag deposit	1.2.4.7(1), No Mgt.
37	Z	Z, Z&Z, GL	E-LW, A	H		x		x		Private, GL	Severely eroded	1.2.4.7(1), No. Mgt.
42	AA.	W&T, W, GL	LW	H	x			x		OSA, GL, Private	Destroyed	1.2.4.7(1).8, Interpret
43	McK	Z, AA, W&T, GL	E-LW	H	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1).8 Interpret
44	AA	W&T,W, Z&Z,S,GL	W, A	H		x		x				

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
45	AA	W, Z&Z, GL	LW	H		x		x		H.D.	Severely eroded	1.2.4.7(1), No Mgt.
46	AA	W&T, W, Z&Z, S, GL	LW	H		x		x		OSA	Severely eroded	1.2.4.7(1), No Mgt.
47	AA	Z, AA, W&T, GL	LW	H	x			x		OSA, GL	Destroyed	1.2.4.7(1), No Mgt.
49	AA	Z, AA, W&T W, Z, Z&Z, S, E, GL	A-LW	H	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1), No Mgt.
50	AA	W&T, GL	Unk	H		x		x		Unknown	Could not relocate	1.2.4.7(1), No Mgt.
51	AA	M, Z, A, W&T, W, Z, Z&Z, GL	A-LW	H	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1), No Mgt.
52	AA	M, Z, AA, W&T, W, Z, GL	E&LW	H		x		x		OSA, GL, Private	Severely eroded	1.2.4.7(1), No Mgt.
53	Z	Z, Z&Z, GL	P, A, E&MW	H		x		x		Private	Inundated	1.2.4.7(1), Field Check*
55	Z	Z&Z, S, E, GL	A, LW	H	x			x		OSA, GL, Private	Destroyed	1.2.4.7(1), No Mgt.
106	W	Z, M, S, Z&Z, GL	M-LW	H	x			x		OSA, Private	Inundated	1.2.4.7(1).8, Interpret
107	W	GL	Unk	H		x		x		OSA	Severely eroded	1.2.4.7(1), No Mgt.
108	W	Z, W, Z&Z, GL	MW, PH	H	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1).8, Interpret

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
[illegible]	W	W, Z&Z, E, GL	Unk.	H	x			x		OSA, GL, Private	Low research potential	1.2.4.7(1), No Mgt.
[illegible]	W	GL	Unk.	H		x		x		OSA	Destroyed	1.2.4.7(1), No Mgt.
[illegible]	W	GL	Unk.	H		x		x		OSA	Severely eroded	1.2.4.7(1), No Mgt.
[illegible]	W	Z&Z	Unk.	H	x			x		OSA	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	W	Z&Z, GL	Unk.	H		x		x		OSA	Severely eroded	1.2.4.7(1), Field Check*
[illegible]	W	M, Z&Z, E, GL	W	H	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1).8, Interpret
[illegible]	M	Z&Z, GL, M	A,LW	H		x		x		Private	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	M	Z&Z, GL	M-LW	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	M	Z, Z&Z, M, GL	Unk.	H	x			x		OSA, Private	Lag deposit	1.2.4.7(1).8, Interpret
[illegible]	M	Z&Z, GL	Unk.	H	x			x		OSA, Private	Lag deposit	1.2.4.7(1).8, Interpret
[illegible]	M	Z, Z&Z, GL	Unk.	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1).8, Interpret
[illegible]	M	Z, Z&Z, GL	A, LW	H		x		x		Private	Severely eroded	1.2.4.7(1), No Mgt.
[illegible]	M	Z, M, Z&Z, GL	A, MW	H		x		x		OSA, Private	Exposed bedrock	1.2.4.7(1), No Mgt.

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
[illegible]	[illegible]	[illegible]	A,M-LW	H	x			x		Private, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	M, [illegible]	W	H		x		x		Private	No research potential	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible]	LW	H	x			x		Private	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible]	L-MW	H		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	M, [illegible]	A-LW	H		x		x		OSA, Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	M, [illegible]	A-MW	H	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible]	LW	Unk.	x			x		Private, OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible]	MW	Unk.	x			x		Private, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	M, [illegible]	LW	Unk.	x			x		Private, OSA	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	M	[illegible]	Unk.	Unk.	x			x		Private, OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	M, [illegible]	Unk.	Unk.	x			x		Private, OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible]	Unk.	Unk.	x			x		Private, GL	Lag deposit	1.2.4.7(1), No Mgt.

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
[illegible]	[illegible]	M, [illegible], GL	Unk.	Unk.	x			x		Private, OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible], GL	Unk.	Unk.		x		x		Private	Inundated	1.2.4.7(1), Field Check*
[illegible]	[illegible]	[illegible], [illegible]&[illegible], [illegible], GL	LW, H	Unk.		x		x		Private, OSA	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible], [illegible]&[illegible], GL	Unk.	Unk.		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible], [illegible]&[illegible], [illegible], GL	Unk.	Unk.		x		x		Private, OSA	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	M, [illegible], [illegible]&[illegible], GL	Unk.	H	x			x		Private, OSA, GL	Low research potential	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	M, [illegible], [illegible]&[illegible], GL	EA(?)	Unk.	x			x		OSA, GL, Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible], GL	Unk.	Unk.		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible], [illegible]&[illegible], GL	Unk.	Unk.		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible], [illegible]&[illegible], GL	Unk.	Unk.		x		x		Private	Severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible]&[illegible], [illegible], GL	Unk.	Unk.		x				Private	exposed bedrock	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	R, W&T, GL	A-EW, LW	RS/H	x			x		Sm, GL	Completely excavated	1.2.4.7(1).8, Interpret

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
[illegible]	[illegible]	R, W&T, GL	W-O	V	x			x		Sm., GL	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	R, W&T, GL	W	O	x			x		Sm.,GL	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	R	[illegible], W&T, GL	Unk.	C		x		x		Unknown	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	R, [illegible], W&T, GL	E-LW	C-V		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	Z	Z, GL	Unk.	Unk.		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	Z	M, Z, Z&Z	LW	H	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	Z	Z, Z&Z, GL	Unk.	Unk.		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	Z	Z, Z&Z, GL	Unk.	Unk.		x		x		Unknown	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	Z	Z, GL	Unk.	Unk.		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	Z	Z, Z&Z	Unk.	Unk.	x			x		Private	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	Z	Z	Unk.	Unk.	x			x		Private, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	Z	Z&Z, Z, GL	Unk.	Unk.	x			x		Private, GL	severely eroded	1.2.4.7(1), No Mgt.

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
245	Z	Z, R&S, GL	Unk.	Unk.		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
246	Z	Z	Unk.	Unk.	x			x		Private, GL	Lag deposit, chert not anthropic	1.2.4.7(1), No Mgt.
247	Z	Z, GL	Unk.	Unk.		x		x		Private	Could not relocate	1.2.4.7(1), Field Check*
248	Z	M, Z, GL	Unk.	Unk.	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1), No Mgt.
252	M	Z&Z	Unk.	Unk.	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
253	L	R&S	Unk.	Unk.		x		x		OSA	Destroyed	1.2.4.7(1), No Mgt.
256	M	M	Unk.	Unk.	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
257	Z	M, Z	Unk.	Unk.	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1), No Mgt.
259	Z	Z&Z, GL	Unk.	Unk.		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
260	Z	Z&Z, GL	Unk.	Unk.	x			x		Private, GL	severely eroded	1.2.4.7(1), No Mgt.
261	M	Z&Z, GL	W	Unk.		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
262	M	Z&Z	Unk.	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
263	M	S, GL	LW	Unk.		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
264	M	M&Z, GL	W	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
268	Z	GL	LW	Unk.	x			x		Private, GL	Lag deposit	1.2.4.7(1), No Mgt.
270	Z	M, M&Z, GL	Unk.	Unk.	x			x		Private, GL	Lag deposit	1.2.4.7(1), No Mgt.
272	M	S,E, GL	W	H	x		x			OSA, GL	High research potential	1.2.3.6, Preserve
273	M	M, S, GL	W	H	x			x		OSA, GL, Private	Inundated	1.2.4.7(1), Field Check*
274	Z	Z&Z, GL	W	H		x		x		Private	Lag deposit	1.2.4.7(1), No Mgt.
275	Z	Z&Z, GL	Unk.	H	x			x		Private, GL	Lag deposit	1.2.4.7(1), No Mgt.
276	Z	Z&Z, GL	Unk.	H		x		x		Private	severely eroded	1.2.4.7(1), No Mgt.
277	Z	Z&Z, GL	Unk.	H		x		x		Private	Inundated	1.2.4.7(1), Field Check*
278	Z	S, GL	Unk.	H	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1), No Mgt.
279	Z	Z&Z	W	H	X			x		Private, GL	Lag deposit	1.2.4.7(1), No Mgt.
281	Z	Z&Z, GL	Unk.	C/H		x		x		Private	Inundated	1.2.4.7(1), Field Check*
282	Z	E, GL	Unk.	Q(?)		x		x		GL	severely eroded	1.2.4.7(1), No Mgt.
298	M	GL	Unk.	H	x			x		OSA, GL, Private	Lag deposit	1.2.4.7(1), No Mgt.
300	M	Z&Z, GL	W	H		x		x		OSA, Private	Inundated	1.2.4.7(1), Field Check*

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
[illegible]	M	GL	Unk.	Unk.	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	M	GL	Unk.	Unk.		x		x		OSA	Inundated	1.2.4.7(1), Field Check*
303	Z	Z&Z, GL	W	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
304	Z	Z&Z, S, E, GL	LW	H	x			x		OSA	Lag deposit	1.2.4.7(1), No Mgt.
305	Z	Z, GL	Unk.	Unk.		x		x		OSA	Inundated	1.2.4.7(1), Field Check*
306	Z	M, Z&Z, GL	Unk.	Unk.	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
307	Z	M, Z&Z	W	H	x			x		OSA, Private	Lag deposit	1.2.4.7(1), No Mgt.
308	M	E, GL	Unk.	H		x		x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
309	M	S, E	Unk.	Q, WS	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
310	M	GL	Unk.	H		x		x		OSA	Inundated	1.2.4.7(1), Field Check*
312	M	GL	Unk.	Unk.		x		x		Private, OSA	severely eroded	1.2.4.7(1), No Mgt.
313	M	GL	Unk.	Unk.		x		x		Private OSA	severely eroded	1.2.4.7(1), No Mgt.
315	M	GL	Unk.	Unk.		x		x		OSA	Could not relocate	1.2.4.7(1), No Mgt.
316	M	GL	Unk.	Unk.		x		x		OSA	Could not relocate	1.2.4.7(1), No Mgt.

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
317	M	GL	Unk.	Unk.		x		x		OSA	Could not relocate	1.2.4.7(1), No Mgt.
318	M	GL	Unk.	Unk.		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
319	M	GL	W	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
320	M	GL	Unk.	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
321	M	GL	W	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
322	M	JT, Keyes A-EW notes, J0-2, E, GL		H				x		OSA, HD, GL	Low research potential	1.2.4.7(1), No Mgt.
323	M	GL	Unk.	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
324	M	GL	Unk.	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
327	M	GL	Unk.	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
328	M	GL	Unk.	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
329	M	GL	Unk.	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
330	M	S, GL	U/H	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
331	M	GL	Unk.	M(?)		x		x		OSA	Mounds not cultural	1.2.4.7(1), No Mgt.
333	M	GL	Unk.	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
334	M		Unk.	Unk.	x			x		Private	Lag deposit	1.2.4.7(1), No Mgt.
338	M	GL	MW	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
339	M	GL	Unk.	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
340	M	S, GL	Unk.	H	x			x		OSA, GL Private	severely eroded	1.2.4.7(1), No Mgt.
354	M	GL	Unk.	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
359	M	E, GL	Unk.	H	x			x		OSA	Low research potential	1.2.4.7(1), No Mgt.
360	S	E, GL	LW	H	x			x		OSA	Low research potential	1.2.4.7(1), No Mgt.
361	S	GL	LW	H	x			x		OSA	Lag deposit	1.2.4.7(1), No Mgt.
362	S	GL	A, MW	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
364	S	GL	H	FS	x			x		OSA	Removed by RID-COE	1.2.4.7(1), No Mgt.
365	S	GL	Unk.	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
366	S	GL	Unk.	Unk.	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
367	S	GL	Unk.	Unk.	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
368	S	GL	Unk.	H		x		x		OSA	Inundated	1.2.4.7(1), Field Check*
369	S	GL	Unk.	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
370	S	GL	A, LW	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
371	S	GL	LW, H	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
372	S	GL	A, LW	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
373	S	GL	Unk.	H	x			x		OSA	Lag deposit	1.2.4.7(1), No Mgt.
374	S	GL	Unk.	Unk.	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
375	S	GL	Unk.	Unk.		x		x		OSA	Lag deposit	1.2.4.7(1), No Mgt.
376	S	GL	Unk.	Unk.		x		x		OSA	Lag deposit	1.2.4.7(1), No Mgt.
377	S	GL	LW	H		x		x		OSA	Lag deposit	1.2.4.7(1), No Mgt.
378	S	GL	Unk.	H		x		x		OSA	Lag deposit	1.2.4.7(1), No Mgt.
379	S	GL	LW, H	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
380	JP.	GL	LW	H		x		x		OSA	Lag deposit	1.2.4.7(1), No Mgt.

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
[illegible]	[illegible]	SL, S	LW	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	M	GL	Unk.	H		x		x		OSA	Inundated	1.2.4.7(1), Field Check*
[illegible]	M	GL	W	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	M	GL	Unk.	H		x		x		OSA, Private	Inundated	1.2.4.7(1), Field Check*
[illegible]	J	GL	Unk.	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	J	GL	Unk.	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	J	GL	Unk.	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	J	GL	Unk.	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	J	GL	Unk.	H		x		x		OSA	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	Sp.	SL, [illegible]	Unk.	Unk.	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	J	GL	A-LW	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	J	E, GL	Unk.	H	x			x		OSA, GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	J	E, GL	Unk.	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	M	GL	Unk.	H	x			x		OSA, GL Private	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	M	GL	Unk.	H	x			x		OSA, GL	severely eroded	1.2.4.7(1), No Mgt.

TABLE 7: CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type, function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	x			x		[illegible], GL	Severely eroded	1.2.4.7(1), No Mgt.
[illegible]	M	[illegible]	[illegible]	H	x			x		[illegible], GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	M	[illegible]	[illegible]	H		x		x		[illegible]	Could not relocate	1.2.4.7(1), No Mgt.
[illegible]	M	[illegible]	[illegible]	H		x		x		[illegible]	Could not relocate	1.2.4.7(1), No Mgt.
[illegible]	M	[illegible]	[illegible]	H		x		x		[illegible]	Severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	H	x			x		[illegible]	Removed by RID-[illegible]E	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M-LA	H	x			x		GL	Deflated	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M	H	x			x		GL	Removed by RID-[illegible]E	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		Unk.	Unk.	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		Unk.	Unk.	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M	T	x			x		GL	Low research potential	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M	H	x			x		GL	Removed by RID-[illegible]E	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M	H, T	x			x		GL	Removed by RID-[illegible]E	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M	H	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.

TABLE [illegible] [illegible]RALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # / [illegible]	Recorder	Site-site Relatns	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Removed by RID-COE	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Removed by RID-COE	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		W, H	Unk.	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M	H	x			x		GL	Removed by RID-COE	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible]	W	LS	x			x		GL	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		W	LS	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M	H	x			x		GL	Removed by RID-COE	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M	H	x			x		GL	Removed by RID-COE	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		Unk.	LS	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		W	LS	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.

TABLE [illegible] CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH:	Recorder	Up-date Reports	Ident. Comp.	Site type/ function	GIS Yes	GIS No	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	x			x		GL	[illegible]severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	x			x		GL	Inundated	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		LW	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M	H	x			x		GL	Removed by HID-[illegible]E	1.2.4.7(1), No Mgt.
[illegible]			M	H	x			x		GL	Removed by HID-[illegible]E	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		W	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	Lag deposit	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		[illegible]	[illegible]	x			x		GL	severely eroded	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		H	[illegible]	x			x		GL	Miner, recent TS	1.2.4.7(1), No Mgt.
[illegible]	[illegible]		M	H	x			x		GL	Removed by HID-[illegible]E	1.2.4.7(1), No Mgt.
[illegible]	[illegible]	[illegible]	MS	[illegible]	x			x		GL	Low research potential	1.2.4.7(1), No Mgt.

TABLE [illegible] CORALVILLE LAKE ARCHAEOLOGICAL SITE INVENTORY SUMMARY (CONT'D)

Site # 13 JH	Recorder	Up-date Reports	Ident. Compl.	Site type function	GI Yes	GI N	NR Eligibility E	NR Eligibility I	NR Eligibility U	Curation Repository	Comments	Management Code & Allocation Strategy
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			X		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			X		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			X		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			X		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible], N. Mgt.
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible], N. Mgt.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible]

[illegible] SUMMARY (CONT'D)

[illegible]	Ident.	Site Type	Yes	No	Eligibility Status	[illegible]	Remarks	Management Code & All... Strategy
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible], No Mit.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible], No Mit.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible], No Mit.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible], No Mit.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible], No Mit.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible], No Mit.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible], No Mit.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible].7(1), No Mit.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.2.4.7(1), No Mit.
[illegible]	[illegible]	[illegible]	x		x	[illegible]	Lost deposit	1.2.4.7(1), No Mit.
[illegible]	[illegible]	[illegible]	x		x	[illegible]	Lost Deposit	1.2.4.7(1), No Mit.
x	[illegible]	[illegible]	x		x	[illegible]	Removed by FID-[illegible]	1.2.4.7(1), No Mit.

either for purposes of cultural historical reconstructions or for interpretation of settlement distributions. This phenomenon, of course, derives from the inability of investigators to identity cultural affiliation due to an absence of diagnostic artifacts. Thus, I have been very selective in attempting correlations of particular site classes and settlement distributions at Coralville Lake.

With these assumptions and presuppositions in mind, Table 8 presents a further data reduction. As the table indicates, the total number of components in the Coralville Lake archaeological site tally totals 313. Of these 313, approximately 46% (144) can be defined only as prehistoric with unknown cultural affiliations. This means of course that only about one-half of the reported sites can be utilized for purposes of paleodemography and analyses of settlement systems. Coupled with our still existing limitations in the landscape evolution model of the Coralville Lake environs it should be clear that the following generalizations must be considered tentative, that [illegible] archaeological data base, and, that some of the previously identified cultural affiliations may be incorrect. This last phenomenon is a function both of the improvements in our understanding of regional culture history during the past 3 decades and perhaps the varying sophistication of investigators who have assigned cultural affiliations to particular sites. In spite of these known and suspected limitations the data reduction reflected in Table 8 is quite useful for assessing the current status of inventory at Coralville Lake. The table is merely a point of departure [illegible] the [illegible] results of a century of [illegible] in the region. The following [illegible] as well as [illegible]

TABLE 8: Identified Archaeological Components at Coralville Lake (Listed by Site No.) N=313

PALEOINDIAN (General):	None Known
Fluted Points:	None Known
Lanceolate Points:	53 (f^o - 1, % - 0.0032)
ARCHAIC (General):	2, 30, 31, 36, 44, 49, 51, 53, 55, 122, 127, 128, 137, 142, 143, 171, 172, 202, 322, 370, 372, 395 (f^o - 22, % - 0.0703)
Early Archaic:	None Known
Middle Archaic:	496 (f^o - 1, % - o.0032)
Late Archaic:	326, 457 (f^o - 2, % - 0.0064)
WOODLAND (General):	2, 3, 6, 8, 44, 117, 138, 205, 206, 261, 264, 272, 273, 274, 279, 390, 393, 397, 419, 421, 468, 472, 474, 475, 479, 482, 489 (f^o - 27, % - 0.0863)
Early Woodland:	26, 27, 31, 36, 37, 43, 51, 52, 53, 141, 142, 143, 171, 172, 202, 208, 322, 395 (f^o - 18, % - 0.0575)
Middle Woodland:	31, 33, 36, 37, 43, 51, 53, 141, 142, 145, 145, 208, 395, 457, 464, 467, 500 (f^o - 16, % - 0.0511)
Late Woodland:	30, 31, 36, 37, 42, 43, 45, 46, 47, 49, 51, 52, 53, 116, 122, 127, 137, 140, 142, 144, 146, 202, 208, 227, 263, 304, 360, 370, 371, 372, 377, 379, 380, 381, 395, 485, 497, 503, 504, 507 (f^o - 40, % - 0.1278)
MISSISSIPPIAN (General):	None Known
Late Mississippian:	2, 27, 37 (f^o - 3, % - 0.0096)
Middle Mississippian:	None Known
PROTO-HISTORIC:	None (f^o - 1, % - 0.0032)

TABLE 8: Identified Archaeological Components at Coralville Lake (Listed by Site No.) N=313 (Cont'd)

HISTORIC ABORIGINAL (General): None Known

Early Historic: None Known

Middle Historic: None Known

Late Historic: None Known

HISTORIC EURO-AMERICAN (General): None Known

Early Historic: None Known

Middle Historic: None Known

Late Historic: None Known

Recent (Modern): 364, 456, 458, 461, 462, 463, 468, 471, 473, 476, 477, 486, 487, 494, 495, 499, 503, 504, 505, 506, 507, 521, 522, 524, 525, [illegible]6, 529, 530, 533, 536, 540 (f^o - 31, % - 0.0990)

UNKNOWN HISTORIC
(Component not identified): 157, 330, 371, 379, 392, 427, 538 (f^o - 7, % - 0.0224)

UNKNOWN PREHISTORIC
(Component not identified): 29, 50, 107, 109, 110, 111, 115, 116, 123, 124, 125, 126, 150, 152, 153, 155, 156, 158, 159, 173, 180, 187, 191, 192, 193, 195, 196, 197, 198, 200, 203, 204, 207, 211, 212, 226, 228, 231, 232, 234, 238, 240, 243, 244, 247, 248, 252, 253, 256, 257, 259, 260, 262, 268, 270, 275, 276, 277, 278, 281, 282, 298, 301, 302, 305, 306, 308, 309, 310, 312, 313, 314, 315, 316, 317, 318, 320, 323, 324, 325, 327, 328, 329, 330, 331, 333, 334, 338, 339, 340, 344, 355, 359, 362, 366, 367, 368, 369, 373, 374, 375, 376, 378, 384, 386, 389, 390, 391, 393, 394, 396, 409, 422, 425, 428, 434, 435, 436, 439, 460, 465, 466, 469, 470, 478, 48[illegible], 481, 483, 484, 488, 490, 491, 492, 49[illegible], 4[illegible], 52[illegible], 523, 527, 528, 531, 532, 5[illegible], [illegible]8, 539 (f^o - 144, % - 0.4601)

PaleoIndian: No where on the North American continent are the remains of these early inhabitants securely anchored. Mason has most cogently summarized the elusiveness of the evidence:

> Unfortunately for ease of discovery, these earliest inhabitants were few in number and lived in such small-scale, widely scattered, nomadic, and lightly equipped societies that they left only a scanty archaeological record. And because they were the first people, erosion has had a longer time to gnaw on their remains.
>
> As if in modest compensation for these latter handicaps, the PaleoIndians sometimes left their traces at locations that make little sense when compared to the camp and village preferences of later peoples: at lonely windswept perches high atop hills or even mountain spurs, or on the relatively slighter elevations of ancient strandlines miles away from the nearest water or any other now recognizable resource. Such locations have only recently come to make some sense as archaeologist have grown to realize how much the environment has changed since men first infiltrated the Great Lakes and the northeast corner of the continent. So while the traces of these ancient folk are rare compared with much later times, here and there they signal like beacons on the raised shores of ancient lakes. They invite correlations among past human actions and the extinguished conditions by which they were partly shaped (1981: 82).

I would expect low population density and few settlements assignable to PaleoIndian cultural affiliations, however, the observed frequency for these sites noted in Table 8 is probably an under-representation. Site 13 JH 53 is recorded as a floodplain site and this is also paradoxical. I do not believe that the floodplain setting is a surface of sufficient antiquity to harbor PaleoIndian sites. One method of resolving this apparent disparity is to conduct a field visitation to evaluate JH 53; another is to review the collections from JH 53 but, the location of repository is unknown.

Based on data from other regions we would expect to find these Late Pleistocene-Early Holocene habitations on ridge tops, under or in alluvial fans, buried by colluvial footslopes, or, perhaps within the dunefields on the south margins of Coralville Lake. However, it should be noted that preservation of stratigraphy of ridge top settings of the various interfluves at Coralville Lake is quite remote. The greatest potential for encountering PaleoIndian sites is found on the northern margin of the Hawkeye Wildlife Area where older surfaces are buried by fan development or under the colluvial footslopes.

Archaic: The Archaic traditions encompass a span of approximately 6-7,000 years and thus have been subdivided into Early, Middle, and Late periods. Lack of clear reporting, absence of diagnostic materials, and possibly low site densities have resulted in the definition of no Early Archaic components, a single Middle Archaic component (JH 496), and only two Late Archaic components (JH 326 and 457, the latter of which has no further research potential). As a result, it is necessary to lump the remaining 22 components within the general Archaic category. This cluster represents approximately 7% of the total of 313 components at Coralville Lake. It is predictable that some population growth can account for this increase but the statistical significance here is nil. If settlements from Coralville Lake are consistent with other regions we would expect a wide variety of seasonal encampments with both open rockshelter sites reflecting functionally specific activities.

The landscape model (Volume II) demonstrates that many [illegible] landscapes undoubtedly occupied by Archaic [illegible] have been destroyed by Holocene climatic events [illegible] operations. Nontheless, the distribution o[illegible] components (Volume VI) depicts the expected [illegible] locations for broad spectrum hunters and [illegible] with a seasonal round. The most notable

under-representation is in riverine margins where we can predict that seasonal encampments would have been established to secure aquatic resources including fish, naiades, waterfowl, and aquatic mammals. Because of the destruction of these landscapes it is possible only to infer such site location and resource exploitation. The inference would be greatly strengthened by discovery where comprehensive faunal and floral analyses should yield empirical data.

By Middle-Late Archaic times long distance trade in exotic commodities and relatively complex mortuary behavior had become relatively commonplace in the Eastern United States. Such complexes as "Old Copper," "Red Ocher," and "Glacial Kame" with their characteristic mortuary goods are lacking at Coralville Lake. Whether this is a function of a "real" or perceived absence can only be determined by further investigation. Perhaps the most economical avenue is a review of the materials from JH 2, now housed at the Smithsonian Institution. Additional high priority is assigned to conducting t t excavations at Archaic sites with potential for stratigraphic integrity. Until these evaluations are conducted, or, until additional intact Archaic sites are discovered, interpretations of Archaic chronology and adaptation at Coralville Lake are relegated to a process that can only be called speculation.

Woodland: Significant population increase is indicated for Woodland stage sites at Coralville Lake. approximately 30% of all archaeological sites have been assigned a Woodland cultural affiliation. Of this 30%, 8% are designated only as General Woodland, 6% have been classified as Early Woodland, 5% are assigned a Middle Woodland affiliation, and almost 13% fall within a Late Woodland category. Consistent with Woodland cultural variation found in many surrounding regions, site types and site positions on the landscape are diverse.

At Coralville Lake, and for the Iowa River valley in general, Woodland culture history is not well established. As a result, most researchers, with the notable exception of Adrian Anderson, have preferred to use the ceramic chronology first established for the tri-state locality by Logan (1956), and later refined by Benn (1978, 1979). Anderson, however, has noted that a cross-hatched rim form found at the Walter's site, Sandy Beach, and at JH 500, may belong to a local Late Woodland Phase associated with materials identified at Minott's shelter and Woodpecker cave (Anderson 1971: 40).

Unfortunately, there is little useful published documentation for purposes of summarizing the Late Woodland occupations at Coralville Lake. Perhaps the most comprehensive assessment is that provided by Schermer (1983). Her analyses, however, deals with Woodland habitation sites as a general class. At Coralville Lake it is clear that some Woodland occupations are large, included substantial residential units, and probably once harbored large trash middens. Other Woodland habitation units are small, include rockshelter locations, and probably include seasonal camps for functionally specific short-term extraction activities. It is unlikely that the variation of Woodland habitation sites can be explicated from the current data base as most of the sites, reported along the lakeshore, are severely disturbed. Biased site seeking with the focus placed on undisturbed or buried soils is the only likely way to secure information to aid in the definition of settlement-subsistence systems for Woodland populations at Coralville Lake.

Oneota: Three components (JH 2, 26, and 205) have been classified within a generalized Oneota classification. It is not certain if these components are related to Burlington/Moingona or Orr Phase manifestations. Collections from JH 2, a mound and village site which is now inundated are in the Smithsonian Institution. Site JH 26

produced a single shell-tempered sherd with tool impressions on the inner lip and dentate (stamp?) markings on the shoulder. Finally, JH 205 has been reported as yielding Oneota ceramics. These collections are also in the Smithsonian Institution. Given this very limited evidence it is quite difficult to either identify the specific cultural historical Oneota unit, or, to interpret the sites as habitation sites, temporary camps, or mortuary sites. The general impression is that any Mississippian presence at Coralville Lake is meagre. Insufficient data are at hand even to speculate with regard to the nature and chronology. However, a working hypothesis to guide future research should focus on available resources for Oneota subsistence practices at Coralville Lake. The absence of Oneota sites here may simply be a function of resource availability, that is to say, those resources necessary to support established Oneota lifeways in the Prairie Peninsula may have been lacking in this reach of the Iowa River valley. Benn (1985) has suggested that certain portions of Oneota territory may have remained vacant with the exception of hunting forays or other short-term occupations. The problem with applying this model to Coralville Lake is that it is not very near major settlement clusters. Perhaps the scanty remains of Oneota material culture are derived from either Moingona/Burlington or Orr settlements in southeast Iowa (Henning, E. 1982: 56-60). In any event, the primary research question relating to this prehistoric-protohistoric manifestation at Coralville Lake is one of presence or absence.

Protohistoric: A single component at Coralville Lake has been identified as protohistoric (JH 108). Unfortunately, the Sandy Beach locality has been so severely disturbed it will not be possible to determine the nature of a protohistoric component at this location.

Historic Aboriginal: No components are classified as historic Indian. This would appear to be a function of sampling error at first glance. However, the 40% sample survey recently completed failed to yield any evidence of historic aboriginal evidence at Coralville Lake. We would expect that the Saux-Fox grouping who essentially controlled eastern Iowa during the late 1700's - early 1800's would have left traces of their occupation in the Iowa River valley. In spite of this, no components have been identified that can be correlated with the Early, Middle, or Late Historic Periods as identified by Quimby (1966).

Geomorphic investigations conducted as part of Phase III inventory have identified a significant number of recent landscapes. In some instances these are capped with a thin mantle of post-settlement alluvium. In addition, many of the recent surfaces, those that would likely harbor historic period aboriginal sites, have been inundated by the reservoir pool. However, at this stage of investigations it is simply not clear if historic sites are masked by sediments, or, if they are in very low frequency at Coralville Lake.

Historic Euro-American: Like the Native American sites from the historic period, those that can be associated with Euro-American activities such as trading posts, early commercial sites or homesteads are absent from the cultural resources inventory. Recent homesteads, those that were active until the project development, account for 9% of the site total at Coralville Lake.

Unknown Historic: Seven sites totalling approximately 2% of the inventory total have been identified. These sites were considered as a high priority for evaluation because they might provide insights relating to Historic Aboriginal and Historic Euro-American occupation within the project confines. Evaluation, however, yielded no new data.

Unknown Prehistoric: As indicated in Tables 7 and 8, prehistoric sites of unknown cultural affiliation represent

almost one-half of the cultural resources data base at Coralville Lake. Of the total of 144 unidentified prehistoric sites, the vast majority are classifiable as thin lithic scatters. Others may not, in fact, represent archaeological sites. This interpretation derives from description of cultural materials as "possible manos" and "chert chunks." Field verification of such sites may demonstrate that some "assemblages" are simply residual cherts exposed by erosion. In any event, it is not currently possible to utilize these sites for purposes of interpretation or for understanding man-land relationships for specific prehistoric cultures.

In conclusion, the current inventory provides minimal insights into the true distribution of PaleoIndian and Archaic settlements. Woodland cultures are well represented and, as one would expect, the diversity of archaeological units increases during Late Woodland times. Oneota sites and other Mississippian manifestations are very rare. As a working hypothesis, we interpret the narrow configuration of the Iowa River valley as a deterrent to significant Oneota occupation. Historic period sites reflecting utilization of the project environs by aboriginal populations or Euro-Americans are absent. It is not clear if this is a true reflection of population density or if the masking of more recent surfaces by sediments or inundation is a source of bias in the data.

SUMMARY OF IDENTIFICATION PHASES (0-III):

Previous identification studies at Coralville Lake have resulted in the definition of 198 archaeological sites of historic or prehistoric origin. Because these studies were not integrated within a project-wide framework, data were not comparable, nor were the results sufficient for understanding the true nature of site distributions at Coralville Lake. This limitation was reduced in large part by systematic sample survey of 21.5% of the Coralville Project area which provides a meaningful and statistically reliable basis for predicting site distributions.

The 100% survey of recreation areas at Coralville Lake has expanded the sample (313 components, 266 sites) of archaeological and historic sites. When coupled with the data derived from geomorphic/stratigraphic studies at the project locality, the identification of cultural resources is now completed. From these three identification phases it is possible to develop a comprehensive model of site distributions at Coralville Lake. This significantly enhances planning and management of cultural resources. Inventory or identification will only have to be conducted at new proposed locations of impact. The nature of investigations, ranging from monitoring to intensive survey will be determined by review of the data base and the predictive model.

EVALUATION:

Evaluation of the known sample of archaeological and historic sites at Coralville Lake has been minimal. Of the few sites (less than 10) that have been subjected to test excavations prior to this CRMP study, most have been in severely disturbed contexts. As a result, these sites have provided little useful information with regard to past occupation of the project lands. This lack of information from excavated contexts makes it difficult to determine the significance, in terms of the National Register criteria, of Coralville Lake sites. In turn, in the absence of a reliable data base which establishes cultural affiliation, subsistence, settlement, functic , and chronology only a broad series of research questions can be formulated. Until such time as a valid sample of historic and prehistoric archaeological sites are subjected to National Register Evaluations appropriate endemic evaluation criteria cannot be established.

Effective management of the cultural resource base will not be possible unless accurate allocation decisions can be made. For example, if most of the archaeological sites along shorelines in the eastern one-third of the project area are destroyed (we suspect this to be true), there will be few candidates for preservation. At the same time, if most sites are destroyed at that locality, we should make special efforts to preserve the few remaining examples. Finally, if sites in this severely impacted locality cannot be preserved, immediate consideration for conservation is necessary.

To resolve this serious management deficiency, the following steps were taken to complete the evaluation stage. First, previously excavated site collections and field notes were reviewed. As so few sites have been excavated at Coralville Lake, this was not an imposing task. However,

every effort was made to place stratigraphic and analytic interpretations within a common perspective. Consideration was given to reviewing existing surface collections. Of particular interest here was the recording of diagnostic artifacts on a project-wide basis. This, in effect, helped to establish a better set of working "type descriptions" for the project area. In addition, this review resulted in the refinement of the presently assigned cultural affiliations. Finally, inventories of cultural materials from previously collected and excavated sites were integrated within the master data file for Lake Coralville archaeological sites.

A second aspect of evaluation consisted of field investigation of a larger sample of sites. Utilizing combined methods of coring and controlled test excavations, and, based on the results of Phase I-III identification tasks, a representative evaluation sample was initially developed. Emphases were placed on historic and prehistoric sites that were expected to yield data from undisturbed contexts.

Prior to this evaluation phase, it was not possible to formulate and evaluate endemic criteria for eligibility of sites for the National Register of Historic Places. This does not imply that research designs prior to fieldwork were ignored. Rather, the lack of basic subsistence and settlement data required that initial forms of inquiry be directed to broad research questions. For example, initial modeling of site distributions revealed two potentially significant phenomena. First, Archaic and Late Woodland sites were abundant relative to PaleoIndian, Late prehistoric (Oneota), Proto-historic, and Historic period sites. In addition, there were "perceived" preferences for site location on the Iowa River Floodplain, Southern Iowa Drift Plain (Interfluve), and terraces with thick loess mantles. Relatively few sites were noted on terraces lacking the loess mantle, on the Iowan surface (forest soils in thick aeolian sediment), tributary floodplains, tributary valley rockshelters, and the Southern Iowa Drift Plain ridgetops.

This over-representation of Archaic and Woodland sites and the associated skewed distribution in specific topographic/geomorphic contexts was due to bias in earlier investigations. Nontheless, these topics of population aggregates and their distribution on specific landscapes were the first research questions that were tested through the evaluation procedures. At the same time, field and laboratory procedures focused on identifying specific site functions, chronology, and the recovery of floral and faunal remains.

Securing such baseline information provided for opportunity to define levels of significance of sites and establish criteria for future evaluations. In addition, securing such information allowed for a much more refined statement of data limitations. If for example there truly are very few Oneota sites within the project boundaries this may indicate functionally specific utilization of this reach of the Iowa River by Oneota populations. We would assume that village horticulture patterns either were not practiced within the project area, or, appropriate locations were simply not available to Oneota populations. By the same token, Late Woodland sites are numerous and are located in diverse habitats. Our assumption, based on existing settlement and subsistence models is that some of these sites represent more permanent base camps while others, particularly those in 3d and 4th order stream valleys represent seasonal (winter?) or short-term extraction camps. Finally, is the tremendous under-representation of historic aboriginal sites a function of survey bias, or, does the Coralville Lake locality lack the attributes required by Historic period cultures, e.g., opportunities for participation in Euro-American trade? In any event, a more comprehensive and specific set of criteria will have to be developed through the evaluation phase. In turn, these research themes or questions play a significant role in the subsequent conservation phase.

CURRENT EVALUATION STATUS:

Prior to 1986 one hundred nine (109) sites at Coralville Lake had been subjected to evaluation. The methods and techniques of evaluation ranged from complete excavation in a few instances to formal test excavations. Some sites had been evaluated by review of previous investigations followed by a field verification to ascertain current status. In some cases soil coring, shovel probing, or simple observation and surface collection have provided sufficient information to determine the potential for future research at a given site. An additional 167 sites were subjected to evaluation in 1986. As detailed in Overstreet, Lurenz and Rosen (1986), a single site, 13 JH 272, is considered to have sufficient stratigraphic integrity to yield significant data. Those sites subjected to evaluation via application of the National Register Criteria were noted in Table 7 which lists the state of Iowa site codification number, the investigators that have conducted various activities at each site, and a brief summary either of the methods employed, or, of the current site status such as "inundated," "destroyed," or other relevant commentary. Only those sites where sufficient information exists and where verification has been conducted are considered evaluated. The exercise here was designed to provide a current assessment of the archaeological data base at Coralville Lake and validate the level of site destruction. Unfortunately, only one of the 276 sites subjected to evaluation are considered eligible for the National Register of Historic Places.

Ancillary to this task was an assessment of sites that should be assigned highest priority for future evaluation. This was a difficult task because of conflicting observations of earlier researchers which have already been discussed. However, in no instance did I assume data to be

incorrect. Further, the focus was placed on known archaeological sites that had apparent potential for intact stratigraphic deposits, or, that would provide information relating to specific questions raised by the inventory Field work commenced in the summer of 1986 under the auspices of contract number DACW25-86-C-0036. Provisions were made to evaluate up to 10 of the sites listed in Table 9. However, reconnaissance operations resulted in the determination that virtually all of the sites in our priority listing, with the previously noted single exception had been destroyed by erosion or other means. Figures 5 - 8 provide graphic portrayals of severely eroded landscapes on which these sites were once situated. Consultation with Rock Island District Corps of Engineers cultural resources staff and with the Iowa State Historic Preservation Officer's representative (Dr. Kay Simpson) resulted in a modification of the original evaluation contract.

It was determined that evaluation, applying reconnaissance techniques supplemented by soil coring, shovel probing, surface collecti ., and limited excavation would be applied to remaining sites at Coralville Lake that had not been adequately evaluated.

A total of one hundred and sixty seven (167) archaeological sites were visited, several on two or more occasions to assess their potential. Invariably, those sites located in the Iowa River gorge and its tributaries were found to have been severely impacted by reservoir operations. Almost all of the sites that were field checked were found to represent lag deposits where artifacts were encountered on pre-Holocene surfaces or on scoured bedrock. The results of these site evaluations have been detailed in Overstreet, Lurenz, and Rosen (1986). This excercise completes the evaluation phase of cultural resources management at the Coralville Lake project site summary. Table 9 presents the tabulation of archaeological sites that were assigned highest priority for evaluation.

It should be noted that many of the sites indicated in Table 9 were evaluated by simple reconnaissance techniques supplemented by coring and or minimal excavation.

Figure 5: View of 13 JH 42, The Walter's Site (Elevation 696.4, artifacts occur as a lag deposit on a severely eroded dune feature).

Figure 6: View of 13 JH 123 (Elevation 682.62, artifacts occur as a lag deposit on exposed bedrock, note drowned creek mouth and erosion of tributary valley sideslopes).

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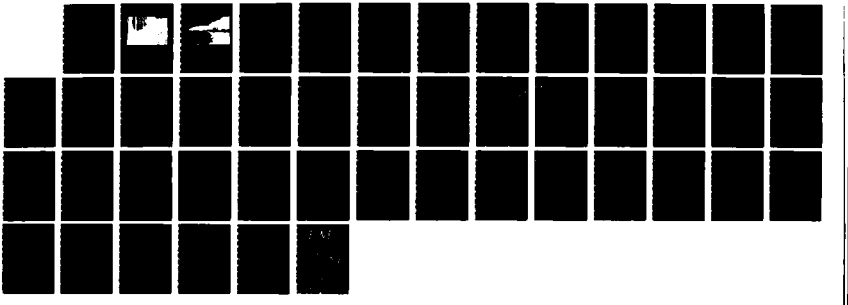


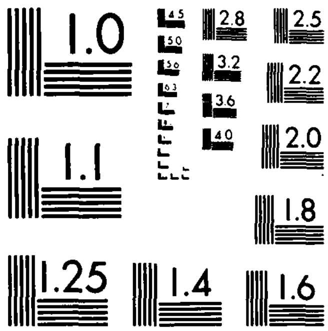


Figure 7: View of 13 JH 152, currently inundated (note upslope erosion from site at current, November 1986, shoreline).

Figure 8: View of 13 JH 394 (erosion has removed former terrace to bedrock, artifacts occur as lag deposit).

TABLE 9: Site Evaluation Priorities for Coralville Lake (Sites evaluated in 1986)

Site #	Previous Recommendation	Objectives
JH 6	No research potential (Perry 1983)	Mound remnants should be investigated to determine cultural affiliation which is currently unknown
JH 30	Testing recommended (Zieglowsky and Zalesky 1981)	Site has yielded "Middle-Late Archaic" artifacts. Should be tested to determine nature of Archaic occupations and stratigraphic potentials
JH 33	High research potential (Emerson 1984)	Determine if stratigraphy remains intact at this multi-component Woodland site
JH 37	High research potential (Zieglowsky and Zalesky 1981)	Determine if stratigraphy remains intact at this multi-component Archaic-Woodland site
JH 42	Completely excavated (Anderson 1971)	Coring should be conducted to determine presence of pre-Woodland surfaces, or, remnants of late prehistoric strata
JH 43	Low potential (Zieglow- and Zaleski 1981), portions of site may remain intact (Emerson 1984)	Coring should be conducted to determine presence or absence of intact surfaces
JH 49	High Research Potential (Zieglowski and Zalesky 1981), Low potential Emerson (1984)	Coring should be conducted to determine the presence or absence of intact strata at multi-component Archaic-Woodland site
JH 51	Destroyed (Anderson 1971) High potential (Zieglow-ski and Zalesky 1981)	Coring should be conducted to determine presence or absence of intact strata at this multi-component Archaic-Late Woodland site.
JH 52	High Potential (Ander-son 1971), Moderate potential (Emerson 1984)	This Early and Late Woodland site should be cored to determine presence or absence of intact surfaces.

TABLE 9: Site Evaluation Priorities for Coralville Lake (Cont'd)

JH 53	High Research Potential (Zieglowski and Zalesky 1981)	Site has yielded "Paleo/ Archaic-Early/Middle Woodland Should be subjected to coring to determine presence or absence of intact stratigraphy
JH 109	Intact strata with artifacts to depth of 40.0cm (Emerson 1984)	Apparently no diagnostics recovered from 6 shovel tests. Larger sample needed and more detailed sub-surface evaluation required for NR eligibility
JH 122	Very High potential (Zieglowsky and Zalesky 1981)	Apparent Middle Woodland ceramics, components identified as Late Archaic-Late Woodland. Terrace margin should be cored and test excavations conducted to secure sample of cultural materials and determine site integrity
JH 127	Very High potential (Zieglowsky and Zalesky 1981)	Archaic-Late Woodland, secure sufficient information for eligibility for NR
JH 128	Very High potential (Zieglowsky and Zalesky 1981)	Archaic-Late Woodland, Secure sufficient information for eligibility for NR
JH 146	High potential (Zieglowsky and Zalesky 1981)	Normally inundated, if possible, coring should be conducted during low water stage to verify stratigraphy
JH 150	Salvage Recommended (Zieglowsky and Zalesky 1981)	Determine if any portion of site remains intact prior to any intensive investigations or site stabilization
JH 152	High potential, testing recommended (Zieglowsky and Zalesky 1981)	Determine site context and verify cultural affiliation(s

TABLE 9: Site Evaluation Priorities for Coralville Lake (Cont'd)

JH 153	High Potential, testing recommended (Zieglowsky and Zalesky 1981)	Determine cultural affiliation(s) and site integrity.
JH 157	Unknown research potential	Determine cultural affiliation(s) and si integrity.
JH 203	Unknown research potential	Faunal remains and charco recovered from 3 small te pits in 1979. Site should evaluated for NR.
JH 204	Should be re-examined Weichman and Tandarich (1974)	1 test pit in 1956 in rockshelter. Site should evaluated for NR.
JH 205	Reported as completely excavated.	300^2 feet excavated. Site is much larger than area excavations. Should re-evaluated to determine portions remain intact.
JH 270	High Research potential (Zieglowsky and Zalesky 1981)	Determine cultural affiliation(s) and si integrity.
JH 272	"Rare example of upland site that appears relatively intact" (Emerson 1984)	Determine specific Woodland cultural affiliations and site integrity.
JH 273	"Should receive priority in re-survey" (Schermer 1983)	Determine specific Woodland cultural affiliations a site integrity.
JH 277	High research potential, salvage recommended (Zieglowsky and Zalesky 1981)	Determine cultural affiliation(s) and site integrity.
JH 279	High research potential, salvage recommended (Zieglowsky and Zalesky 1981)	Determine cultural affiliation(s) and site integrity.
JH 330	Unknown research potential	Determine cultua affiliation(s) and si integrity.
JH 331	Poor potential (Miller 1980)	Determine if linear mound cultural and identify bo found at this location.

TABLE 9: Site Evaluation Priorities for Coralville Lake (Cont'd)

JH 379	Unknown research potential	Determine cultura affiliation(s) and si integrity.
JH 392	Unknown research potential	Determine cultura affiliation(s) and si integrity.
JH 394	"Periodic checking recommended" (Schermer 1983)	Site is described as never cultivated and protected f erosion. Test for eligibility.
JH 395	"Immediate testing recommended" (Schermer 1983)	Determine integrity of this Archaic-Woodland site.
JH 409	Poor potential (Emerson 1984)	Core to determin Stratigraphy
JH 427	Unknown research potential	Determine cultura affiliation(s) and si integrity.
JH 538	Unknown research potential	Determine cultura affiliation(s) and si integrity.

CONSERVATION:

As previously noted, conservation of cultural resources refers to a commitment of sites for research and/or management purposes. Having completed the evaluation phase, cultural resource managers may determine that recovery efforts are warranted at particular sites to fill gaps in the data base. Currently, there is absolutely no subsistence data for Middle Woodland occupations at Coralville Lake. Managers may find it appropriate to secure such information to enhance management and interpretation of such sites. The decision to "spend" the resource here is primarily for addressing a particular research question. It would be considered unwise, however, to commit a site for excavation that would duplicate existing information. In that instance, preservation is clearly a better alternative.

In other situations conservation may result primarily from management practices. It may not be feasible from cost or technical perspectives to stabilize or protect specific historic or prehistoric sites. In such a scenario, conservation would be preceded by a research design which addresses not only the endemic criteria derived from the evaluation phase, but also other research questions within the broad framework of anthropology or related disciplines.

Conservation of archaeological sites may also be considered for experimental purposes. In this instance, emphases would be placed upon sites not generally considered significant. A frequently occurring class of sites at Coralville Lake are the so-called lithic scatters or indeterminate sites. It may be appropriate to subject such sites to applications of new methods and techniques in archaeology in attempts to refine interpretation. It might also be appropriate to commit a site of this class to determine the effects of various construction or management impacts. The decision to effect conservation measures for

potentially significant sites, in conclusion, is based on need. The first situation is one wherein a particular research objective can be met only through conservation. The second situation is one wherein preservation is not feasible. In this latter instance considerable rigor is placed upon the development of a research design that maximizes the research and management information yield. In effect, the research design must clearly serve as justification for the expenditure of the resource. The third aspect of conservation relates to experimental applications. This measure is not normally applied to sites considered significant. Further, the methods and techniques of investigation may be more important than the consideration of specific research problems. A suitable example is the experimental technique of identifying mammalian species from hemoglobin crystals. These crystals are in some instances found imbedded in the dirt matrix which often clings to flake scars on projectile points. One could not justify the expenditure of a potentially significant site for such endeavors. however, work at a highly disturbed site known to yield projectile points or butchering tools would be suitable for recovery of tools for analyses.

In summary, the decision between preservation and conservation allocations will always be difficult. Again, preservation is the desirable alternative. The over-riding concern of management should be preservation of the data base. When preservation is not feasible or possible conservation must be considered. It is axiomatic that archaeological recovery is time consuming and costly. Thoughtful conservation with ample justification for commitment of the resource, i.e., a technically excellent research design and recovery plan, is sound management. Recovery in the absence of appropriate designs and recovery plans cannot be justified.

PRESERVATION:

When allocation decisions are made, subsequent to completion of Phases 0-IV, it is likely that most significant sites will be placed within this alternative management strategy. Sites allocated for preservation represent the pool of resources to be managed and protected for future generations. The significance or research value is an important element in the preservation strategy. As noted in Treatment of Archaeological Properties: A Handbook:

> If an archaeological property can be used only to address unimportant questions, or questions that have been or can be better addressed using other sources of information, then the property itself is unimportant from an archaeological standpoint. Of course, the same property may be valuable for some other reason, such as the quality of its architecture, its association with some important historical event, or its cultural significance to a local group (Advisory Council on Historic Preservation, 1980: 7).

This statement serves to link the application of evaluation criteria of national, regional, and local significance to the preservation allocation. At the same time, these criteria need constant review and should not be the sole basis for preservation. For, as the handbook also states:

> It would be arrogant to assume that we who are alive today can decide precisely which questions we need to ask about the past, and which we do not. New questions about the past are always developing, and old questions are being answered. Answering old questions usually generates new ones. As new questions are asked, different kinds of information become important, and information may need to be examined in different ways. At the same time, techniques of field study and analysis are constantly being developed and improved, making it possible to address questions that could not be addressed using older techniques. Thus there is a danger that if only those archaeological properties we see as valuable today are protected we will allow the destruction of properties that will be of great value in the

> future. Accordingly, it is appropriate to preserve in place as large a range of archaeological properties as possible, even if we cannot define precisely how we would use the information they contain. There are obvious practical limits to application of this principal, but, as a rule, if an archaeological property can practically be left in place and preserved from damage, it should be (ACOHP 1980: 10-11).

Allocation of sites and properties for preservation is considered a long-term commitment. Because the preservation category represents the data bank for future generations of researchers in a variety of disciplines, the strongest levels of protection should be accorded.

Preservation, while normally a long-term commitment, may also be short-term. In this latter instance, if RID-COE is unable to protect a significant site from vandalism, natural or reservoir induced erosion, or other forms of landscape degradation, it may be necessary to reallocate a site to the conservation category. To identity attrition of sites in a preservation category, RID-COE cultural resource specialists may choose to conduct periodic monitoring of threatened sites and properties.

Where feasible, it is appropriate to review sites placed in the preservation category for adaptive reuse. It is likely that some significant sites are currently being impacted by agricultural practices on lease lands. Once the identification and evaluation phases have been completed and sites are defined to fall within this scenario, perhaps they could be removed from agricultural lease and utilized for wildlife habitat. The same consideration could be given to sites that fall within existing and proposed public use areas. If impacts are significant these locations might be shifted to "natural areas" which in turn would reduce intensive use impacts. The intent here is to maximize preservation efforts. However, these efforts must also accommodate other agency needs and requirements. Upon completion of the inventory and evaluation phases of this plan, only JH 272 has been allocated to a preservation strategy.

INTERPRETATION:

The lay public secures knowledge and enjoyment of archaeological and historic sites only through interpretation designed to provide such education and recreation. At this point in the development of cultural resources management interpretation has lagged far behind applications of identification, conservation, and preservation. This means that while the expenditure of public funds is significant, the public has secured little benefit from the expenditure. Coralville Lake is perhaps better interpreted than other project areas as popular exhibits have been installed at the Visitor Center. Improvement can easily be developed in three areas.

First, subsequent to inventory, evaluation, and perhaps conservation, the popular exhibits could be updated. Greater emphases should be placed on reconstruction of past lifeways. Current exhibits are focused on material culture (artifacts) and limited chronology. These could be improved for both educational and recreational purposes if the themes of the exhibits informed visitors how past residents used this reach of the Iowa River and its surrounding environments. More extensive applications of past climate and landscape would provide visitors with an opportunity to relate the current environmental and cultural conditions at the project area with those of the last 12,000 years.

A second area of improvement would be the development of pamphlets and/or brochures that serve to explain the RID-COE cultural resources management program and its preservation responsibilities. I believe that this would aid in preservation efforts through establishment of better educated recreational users of the project lands. These pamphlets and brochures could be made available at intensive use localities and should serve to direct visitors to the exhibits at the visitor center.

A third area of improvement would be the development of some sites primarily for interpretation. For example, should evaluation indicate that a given site has minimal research potential, it might be allocated for interpretation. Appropriate signage could be developed for self-guided tours. These might be integrated within existing recreation facilities such as bike trails, hiking trails, or day-use areas. Site locations deemed best suited to interpretation are identified in Table 7 of the plan.

Two other forms of interpretation are appropriate. Again, subsequent to Phases I-IV, a liberally illustrated narrative should expand the information available in the exhibits and brochures and be made available, perhaps on a cost basis, at Coralville Reservoir. The popular narrative must be interesting. That is to say, it should be jargon free and informative. Focus should be placed on why and how cultural resources are managed by RID-COE. Further, the science of archaeology and the benefits of such scientific endeavors should be clearly presented. The second form of interpretation, dissemination of results to the professional community, is already a contingency in virtually all cultural resource procurements issued by RID-COE. RID-COE has continually made efforts to reach a wider professional and amateur audience by publication of research results in regional journals. Unfortunately, there seems to be lesser emphasis placed on interpretation for the public who ultimately bear the costs of the research. This management plan notes that preservation is the major issue, however, the lay public needs to known what is being preserved and how these responsibilities are being accomplished for the public good. This aspect of interpretation has been completed as part of the responsibilities outlined in Contract No. DACW25-86-C-0036, as modified.

IMPLEMENTATION OF THE MANAGEMENT PLAN:

The previous discussion serves to relate the major aspects of a cultural resources management plan at Coralville Lake. Features of identification, conservation, preservation, and interpretation have been highlighted. The remainder of this report focuses on processes and procedures of plan implementation.

Of critical importance for implementation of the cultural resources management plan is the maintenance of the data base. Diverse formats and investigative methods of previous work at Coralville Lake have served to hinder effective management. Task-O which consisted of reformating and reorganization of cultural resources information has resolved this limitation. However, the CADD system data will have to be up-dated, perhaps on an annual or semi-annual basis. We have placed archaeological, historical, and geological investigations within the framework of a geographic information system. Standardized recording, storage, and retrieval of information enhances manipulation and interpretation of the data base. To ensure that future management decisions are based on true understandings of the range and variation of sites and properties, the data from Phases I-IV must be integrated within the existing data matrix (see Volumes V, VI, and VII). Provisions have already been made by RID-COE to incorporate results from Phase II, the public use area inventory and evaluation, and Phase III, geomorphic modeling within the existing CADD system and these tasks have been completed and are presented in the data base summary in the following narrative.

Having completed the development phases that have been defined and discussed, the management plan is now in full operation. Management decisions will be made on both

objective and subjective bases, and particular sites and properties will be assigned to allocation strategies. As Green and Plog (1983) suggest, allocation guidelines are applied to determine potential use through consistent and comparable criteria. The key factor in allocation is site value, value determined on the known or potential capability of a given site or property to address important research questions. Oftentimes this value is measured by site stratigraphy, floral and faunal preservation, site function as indicated by physiographic setting, material remains, classes of material culture, chronology or other factors. These sites are classed as possessing integrity. Those sites which have none of these factors and cannot be used to address research topics, particularly when the original site matrix has been destroyed lack integrity--they are insignificant. Figure 9 depicts the process of allocation of sites and properties. The allocation process is analogous in several ways to a taxonomic classification system in that it is hierarchically ordered. However, below the integrity taxon (the third level), categories are not necessarily mutually exclusive. The following narrative describes the allocation process that was applied to the 276 sites identified and evaluated.

Identification: All sites at Coralville Lake are identified. This derives from systematic and biased sample surveys presently in process. It does not refer to a 100% sample. Upon conclusion of scheduled inventory and geomorphic work, a predictive model of site location becomes the basis of identification. Sources for identification are literature and archive review, informant interviews, field research, and application of the predictive model. Each site identified is codified through consultation with the Office of the State Archaeologist. Codified sites are placed in the CADD data base system.

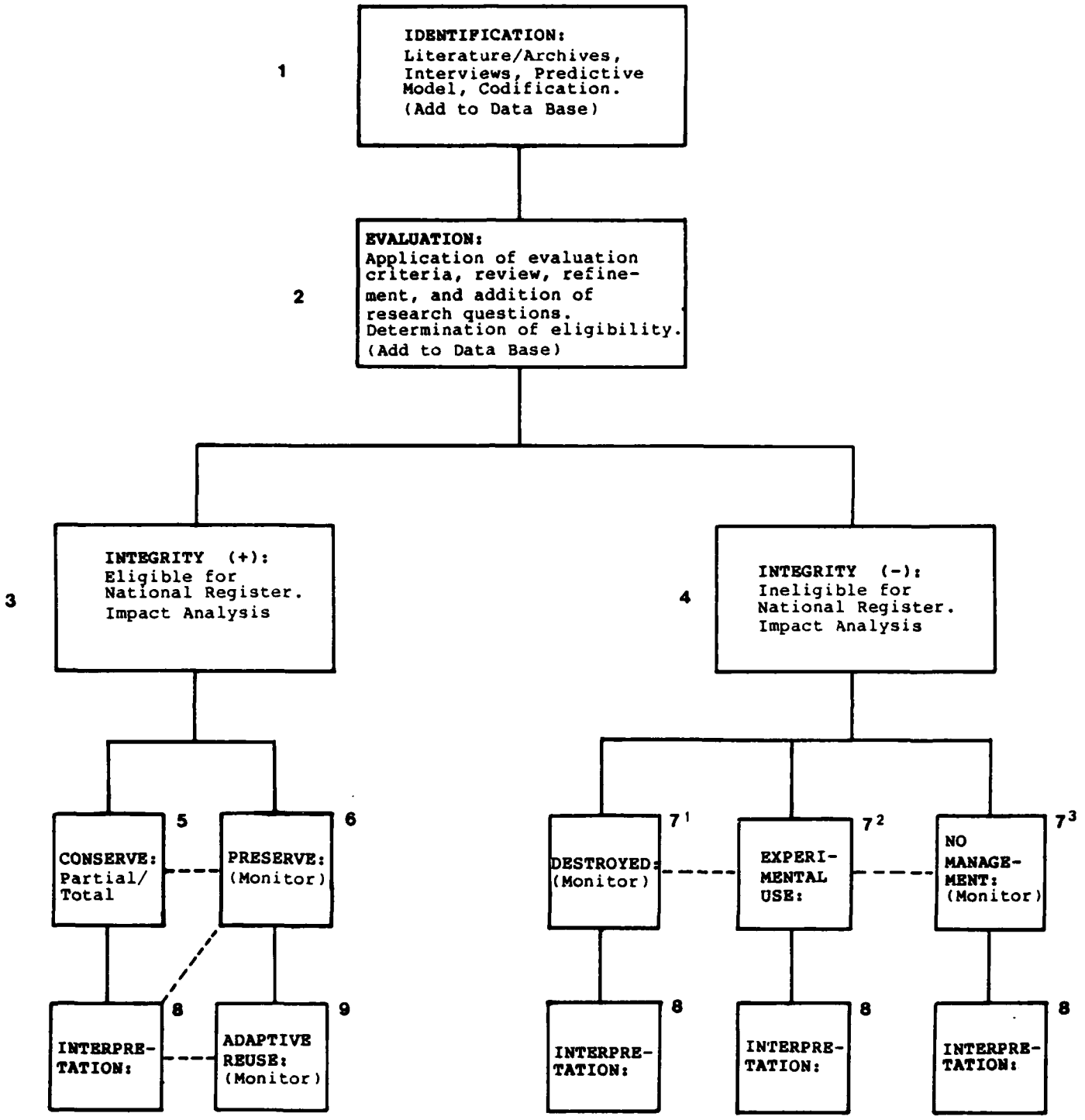


FIGURE 9: Sites & Properties Allocation Process.

Evaluation: Application of evaluation criteria serve to determine the site significant or insignificant. Significance can be at the national, regional, or local level. A determination of eligibility for the National Register of Historic Places is the last step in the evaluation process. Again, all site locational data including discrete site boundaries, location of excavation units, or other site features are placed in the CADD data base system. As the evaluation process proceeds, new evaluation criteria are established and existing criteria are refined.

Integrity (+ or -): Upon receipt of concurrence of recommendation for eligibility, or denial of recommendation, site is assigned an integrity criterion. Obviously, sites that have been evaluated and found to lack integrity are automatically assigned to the integrity (-) category. Those accepted by the Keeper of the National Register are placed in the integrity (+) category. Those rejected by the Keeper are either appealed or placed in the integrity (-) category. These taxa will ultimately include all sites identified at Coralville Lake and serve to differentiate between significant and insignificant sites, each requiring different treatments.

Destroy, Experimental Use, No Management: Insignificant sites can be allocated to three categories. The first category is destruction. Sites determined ineligible for the National Register of Historic Places are worthy of neither preservation or conservation. However, they may be utilized for various experimental purposes including evaluation of construction impacts, development of new methods and techniques, or other applications. Here a subjective judgement is required. For example, a site that has yielded diagnostic artifacts but lacks stratigraphic context would be a better candidate for experimental purposes than a lithic scatter with no diagnostic materials. Various specialized studies such as lithic technology might

also benefit from sites in this allocation strategy. A third category is interpretation. Even though a site has been destroyed, perhaps for construction of public use facilities, it may be an appropriate candidate for interpretation. Thus, a particular site may be subjected to experimental use, destroyed, and later interpreted.

Preserve: The preservation allocation is most important. Whenever possible and feasible, significant sites should be placed in the preservation pool and protected. This is not necessarily a mutually exclusive option as noted below.

Conservation: Sites that are determined significant and cannot realistically be preserved are allocated to the conserve strategy. Entire sites should not be subjected to recovery. Every effort should be made to conserve portions of sites where necessary and preserve the remainder. Either the conserved segment and/or the preserved portion may suitably be allocated for adaptive re-use and/or interpretation. It has been demonstrated that archaeological deposits can be effectively preserved within proposed developments (Overstreet 1985). In addition, dependent on the nature of the development, interpretive potentials through increased visitor use may be enhanced.

In situations where a compelling need for research can be made, it is appropriate to conserve a representative sample of a site allocated to the preservation pool. This should be undertaken only when a superior research design with a clear statement of method and technique has been reviewed and accepted. Review should include agencies and individuals with demonstrated interests in the project locality. Further, each conservation effort should be required to review and revise existing evaluation criteria for Coralville Lake cultural resources.

Interpretation: Interpretation opportunities can be enhanced in many ways at Coralville Lake. This is a long term allocation strategy. At some point in time when identi-

fication and evaluation of the resource is completed, interpretation should be placed on a priority level with preservation.

Adaptive Reuse: Adaptive reuse refers primarily to a potential shift in landuse relative to archaeological site locations. If a significant site is currently being impacted by agricultural use, preservation can be effected by utilizing that tract for wildlife habitat or some other purpose that does not result in degradation of the resource. Adaptive re-use reflects a decision where management priorities are weighed, one against another. For example, where significant sites are threatened by current land-use activities, it may be significantly more cost-effective simply to shift a land-use category rather than to implement protective mechanisms, or, to assume that conservation is the only appropriate alternative. The high priority assignment here is justified as a reasonable alternative to conservation. Of course, this decision will have to be reached following consultation of land managers with conflicting goals weighing both the public benefit and fiscal realities on a case by case basis.

CULTURAL RESOURCES DATA BASE SUMMARY:

In spite of the severe attrition of the archaeological data base at Coralville Lake, completion of the identification, evaluation, and landscape analysis phases has provided substantial insights. Integration of these data has resulted in a formal, working management plan as represented by this report, and, a workable predictive model of site locations (Anderson and Overstreet 1986). Tied together in the functioning geographic information system, the results of these various investigations can now be stated within the contexts of both time and space.

Figures 10 and 11, respectively, identify examples of the horizontal and vertical parameters within which sites of past human occupation are known and suspected to occur. A more detailed appraisal can be found in Anderson and Overstreet (1986) and on site specific bases in the Coralville data files.

The following outlines present a broad description of geomorphic events, landform chronology, and sediment characteristics.

Major Geomorphic Events - Coralville Lake:

I. Prior to 28,000BP
   - A. periglacial climate
     1. Wisconsin glaciation
        - Woodfordian - 22,000 - 12,500BP
        - Farmaldian - 28,000 - 22,000BP
        - Altonian - +70,000 - 28,000BP
   - B. Mass wasting in main valleys and tributaries
     1. north wall of main valley
     2. some tributary fills
   - C. colluvial footslope development (Farmaldian)
   - D. eolian deposition
   - E. Iowan surface being eroded

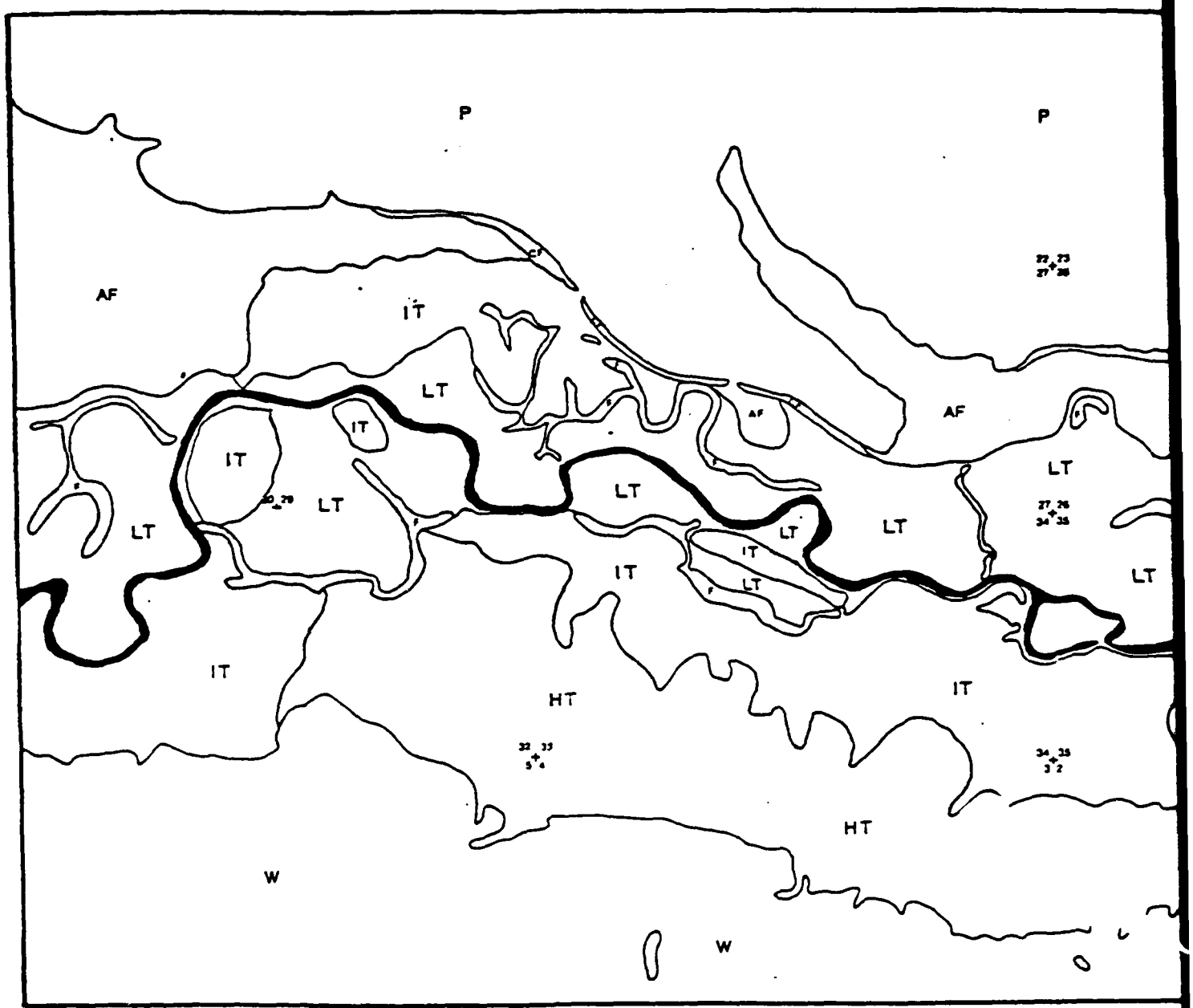


FIGURE 10 HAWKEYE WILDLIFE AREA SURFACES

SCALE 1:24,000

F • FLOODPLAIN

LT • LOW TERRACE MIXED LATERAL & VERTICLE ACCRETION DEPOSITS (LATE HOLOCENE)

IT • INTERMEDIATE TERRACE • THIN (< 1M) REWORKED EOLIAN MANTLE OVER ALLUVIAL SAND (EAR

HT • HIGH TERRACE • THICK (>1M) REWORKED EOLIAN MANTLE OVER ALLUVIAL SAND (LATE WOOD

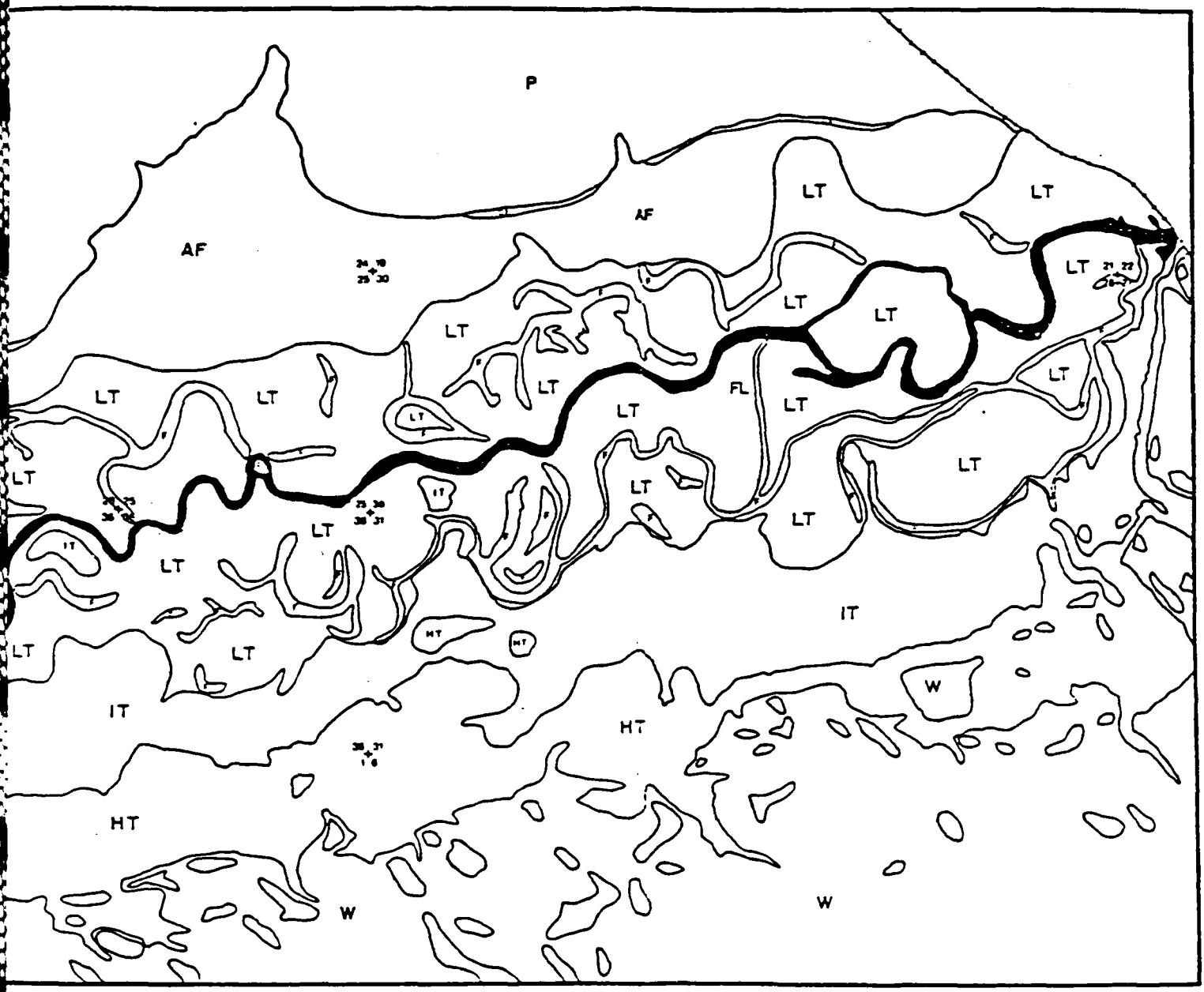
W • MID-WOODFORDIAN & OLDER IOWAN SURFACES (WISCONSINAN. TERRACE)

P • PRE-ILLINOIAN AND IOWAN SURFACES (capped by wisconsinan loess)

AF • ALLUVIAL FAN

○ • DUNES

CF • COLLUVIAL FOOTSLOPES



8 MIDDLE HOLOCENE)

CIAN)

2 of 2

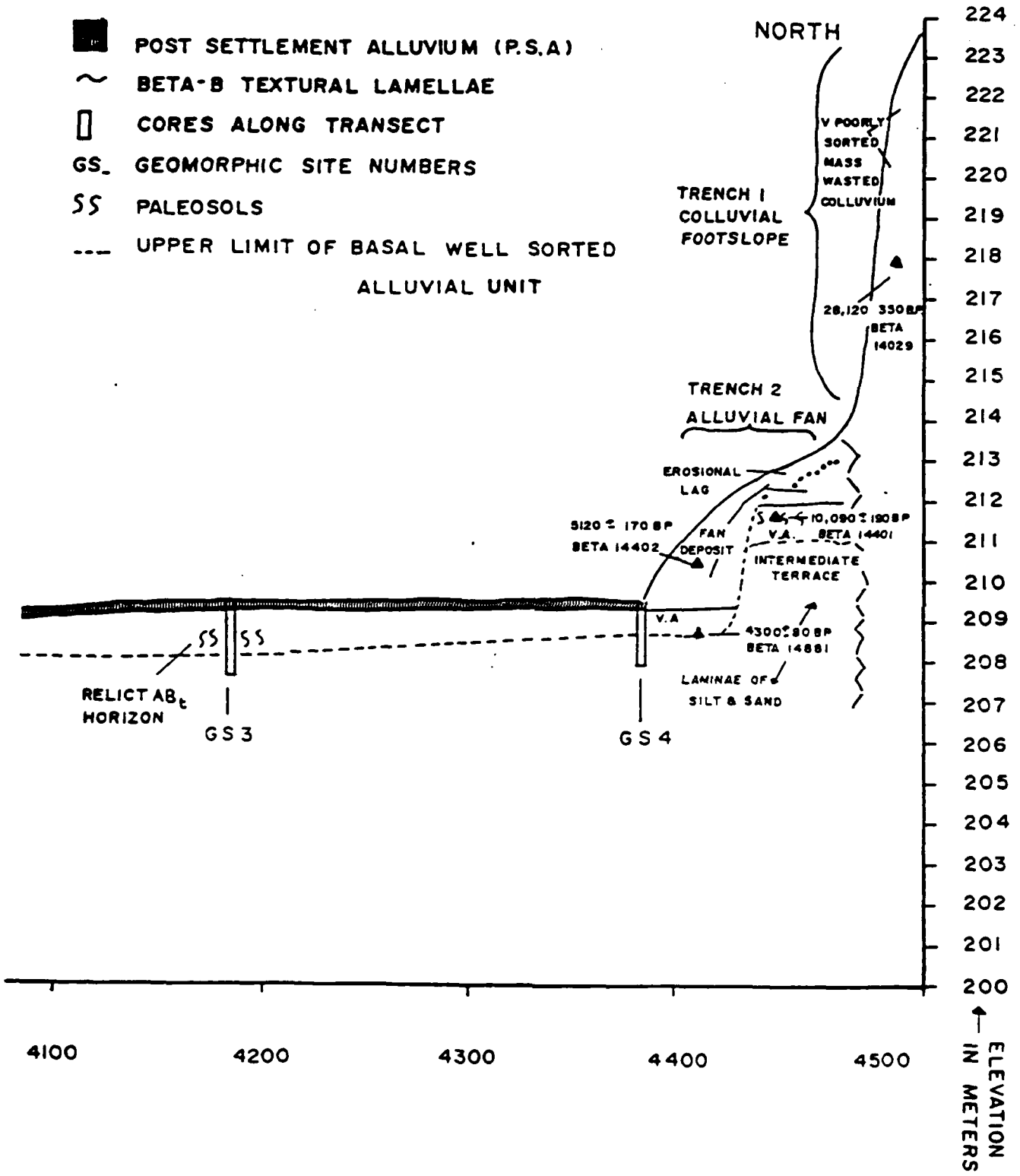


Figure 11: Partial Iowa River Valley Cross-section (VE= 20.0X, after Anderson & Overstreet 1986).

II. 15-16,000BP (Woodfordian)
- A. dune development, interdunal depressions
- B. Loess deposition
- C. erosion of dunes
- D. major valley incision and headward erosion in tributaries

III. 14,000BP
- A. high terrace is active floodplain
- B. loess deposition

IV. 11,000BP
- A. another episode of major valley incision, headward erosion in tributaries
- B. high terrace abandoned

V. Early to mid-Holocene
- A. intermediate terrace is active floodplain - about 11-4500BP
- B. colluvial footslope development
- C. hillslope erosion of dunes and tributaries
- D. alluvial fan development - north end of Hawkeye

VI. 4500-4000BP
- A. low terrace is active floodplain
- B. lateral migration and reworking
- C. 4500BP - shift from zonal to meridional upper air patterns
- D. continued alluvial fan development
- E. hillslope erosion in tributaries

VII. 3000BP
- A. hillslope stabilization because of increase in precipitation and higher density of vegetation cover
- B. but on north wall, stabilization of valley fill component, i.e. alluvial fans and colluvial footslopes
- C. later stream migration and floods, but north valley wall has escaped this
- D. 2800BP - southern margin of Hawkeye - reworking, then floodplain alluviation

VIII. After 2800BP
- A. floodplain aggradation in main valley buries low terrace components
- B. upstream, tributaries scoured
- C. downstream, flood deposits

IX. After 1300BP
- A. eolian reworking associated with large scale warming trend, 11-1300BP
- B. erosion, deflation - short period of drought

X. Recent - historical settlement
   A. abandonment of low terrace, probably between 1895-1937
   B. straightening of main channel, meander cut-off in Hawkeye
   C. increase in frequency and magnitude of floods in the main valley
   D. channel entrenchment in tributaries
   E. erosion and sedimentation probably accelerated
   F. truncation of presettlement surface horizon
   G. deposition of historical alluvium - PSA
   H. surface A horizon missing on high and intermediate terraces, result of oxidation and erosion of formerly organic-rich Mollisols which occupy surface
   I. reservoir impoundment - aggraded active floodplain to elevation of low terrace
   J. creation of natural levee of PSA (1.5m)
   K. PSA concentrated in abandoned channels and depressions found on low terraces
   L. laminated overbank deposits - high magnitude flood events
   M. argillans - few thousand years of soil development
   N. in tributaries - increase in base level - aggradation of lower tributaries and floodplain
   O. burial of lower terrace by uneven mantle of PSA

<u>Major Sediment Characteristics - Coralville Lake</u>:

I. PSA <u>at surface</u>
   A. usually silty
   B. laminated
   C. relatively high pH - 7.0 - 8.0

II. WIS. Loess - <u>el. 218m</u> and Dunes
   A. loess - fine sandy and coarse silty
      1. Argiudoll developed on it
      2. upper units of silt and sandy silt have probably been stable for a few thousand years
   B. dunes
      1. have inter-dunal depressions
      2. paleosol beneath dune - 17,150BP

III. Late Woodfordian High Terrace
   A. active floodplain c. 14,000BP (between end of loess fall and before beginning of Holocene when the Des Moines lobe was in central Iowa)
   B. no loess cap
   C. thick mantle of oxidized, re-worked silty sand
   D. medium fine sand with minor silt (loamy sand)
   E. some iron oxide coatings in peds - was at or near surface, exposed to chemical weathering
   F. lower unit less oxidized, better sorted medium sand

IV. Intermediate Terrace - el. 211m
- A. active floodplain, early - mid Holocene: before 10,000 - 5400BP
- B. north side of Hawkeye, buried
- C. modest cap of PSA underlain by silty sand (sandy loam)
- D. oxidized
- E. underlying basal alluvial unit affected by local water table, exhibits mottling and gleying

V. Low Terrace - el. 209m
- A. active floodplain, late Holocene, c. 4500-6000BP
- B. in part, the present floodplain, hard to tell because of impoundment
- C. PSA
- D. aggradation in very late Holocene
- E. rapid lateral erosion - 4300-3850BP, also flood
- F. course straightening since historical time - increase in frequency and magnitude of floods

The following tables place the identified and evaluated elements of the archaeological data base within the previously identified landscape contexts.

The landform variables included in the prehistoric occupation and landform correlation analysis are defined as follows: (1) terraces (high, intermediate, and low), (2) stream confluence (s), (3) inlets, and (4) uplands.

Terraces are delineated primarily by elevation. The high terrace is located at 700-712' A.M.S.L. (213-217m), the intermediate terrace occurs at 690-700' A.M.S.L. (210-213m), and the low terrace and contemporary floodplain are found at an elevation below 690' A.M.S.L. (210m). In the Hawkeye Wildlife area the three terraces are identifiable geomorphic features (see Anderson and Overstreet, 1986: 19). However, southeast of the Hawkeye Wildlife area in the Iowa River gorge, the Coralville Dam has impounded the main valley and often the low and/or intermediate terraces. In fact, severe erosion has occurred below 708.18' (215.8m) (Anderson and Overstreet, 1985). Therefore, in the Iowa River gorge, terrace sites are identified entirely by elevation.

LANDSCAPE POSITION → / TRADITION ↓	LOW TERRACE	LOW TERRACE W/INLET	LOW TERRACE W/CONFL.	INTER-MEDIATE TERRACE	IT W/ INLET	IT W/ CONFL.	HIGH TERRACE	HT W/ INLET	HT W/ CONFL.	UPLAND SUMMIT	UPLAND SOUTH W/CONFL.	UPLAND SOUTH W/INLET	UPLAND SOUTH	UPLAND WEST	UPLAND SW W/CONFL.	UPLAND SW	TOTAL:
PALEOINDIAN					53	191(?)											2
ARCHAIC (GEN.)	2			30,128, 142,143	37,44,49, 53, 362, 395	36,51,55, 122, 127, 137, 370 372				322	202						21
EARLY ARCHAIC																	0
MIDDLE ARCHAIC									496								1
LATE ARCHAIC																	0
WOODLAND (GEN.)	2,300, 303,489		117,274, 385	3,31,138 142,264, 321,395, 472	44,261 279	36,43,51 273,307,319 475,479	474					205			272	206	30
EARLY WOODLAND				26,143	37, 53, 141	27,52				322	202			208			10
MIDDLE WOODLAND	500			128,457	33,42,37, 49, 123, 141, 362	106,108, 137,467							338	208			15
LATE WOODLAND	146,157 304,500			30,46,47, 140,227, 361,379, 381,457, 485	33,42,37, 49,123, 263, 377	45,52,55, 106,122,127 137,370,371, 372,497,537	144							208			35
ONEOTA	2			26								205					3
PROTO-HISTORIC						108											1
TOTAL:	11	0	3	27	26	36	2	0	1	2	2	2	1	3	1	1	118

TABLE 10: Landscape/Tradition Correlations
(Components are all Johnson County Sites (13 (JH))

TABLE 11: Site Distribution, f^o and % by Landform

Landform	f^o	%
Low Terrace	8	9.90
Low Terrace w/confluence	3	3.70
Intermediate Terrace	21	25.30
Intermediate Terrace w/Inlet	15	18.50
Intermediate Terrace w/Confluence	24	29.60
High Terrace	2	2.50
High Terrace w/Confluence	1	1.20
Upland Summit	1	1.20
Upland South w/Confluence	1	1.20
Upland South w/Inlet	1	1.20
Upland South	1	1.20
Upland Southwest	1	1.20
Upland Southwest w/Confluence	1	1.20
Upland West	1	1.20
TOTAL:	81	99.10

Several sites are located near the confluence of a tributary stream and the Iowa River. Tributary streams range from large permanent watercourses such as Hoosier Creek to small, unnamed intermittent drainages.

Inlets are defined in this analysis as small (less than 500', 152m in length) bays or narrow strips of water that extend into a bank or terrace from the river. These features do not contain a tributary drainage. All inlets were delineated from USGS 1968 (photorevised in 1975) quadrangles.

Upland sites are those occurring above 712' (217m) A.M.S.L., or above the high terrace. These sites are also identified by aspect. One site isolated at the summit of a dissected upland ridge, whereas the others are found on south, west, or southwest-facing slopes. Only those components that could reliably be identified have been used for the site-landscape correlation.

Finally, review of these data will serve to allow for evaluation of the following generalizations. However, it is important to note at the outset that these generalizations, based on sample surveys, site evaluations, landscape analyses, and comprehensive review of existing data, have certain limitations. They are presented as an updated summary of the predictive model contained in Anderson and Overstreet (1986) and also are the basis of the revised prehistoric archaeology overview for Coralville Lake (Overstreet 1987).

Perhaps the most significant limitation of the data base derives from the fact that most information has been surface collected from severely disturbed sites. In effect, this has mixed components from several occupations which, in turn, prohibits critical evaluation of materials other than diagnostic artifacts. A second major limitation is that the most comprehensive excavated data were compiles in the 1950's and early 1960's. As a result, these excavations did not benefit from the recovery of micro-fauna and

micro-flora. While these investigations were certainly well designed and executed, improvements in methods and techniques of the last two decades would have yielded more comprehensive reconstructions. Finally, the Iowa River valley in general has not been the focus of protracted and systematic archaeological investigation. Thus, there are significant limitations of comparable data from similar site contexts in the region. In this sense, the following generalizations are best construed to be utilized as preliminary syntheses. The models set forth here will be useful for future investigations within the watershed, however, there validity will have to be tested from contexts both up and downstream from the Coralville Lake locality.

Assuming that the data are representative, the predictive model established in Anderson and Overstreet (1986) appears valid. The chronology established for these landforms fits well with the identified cultural history. Further, the prediction that the greatest archaeological potential is to be found where steep and low angle alluvial fans encroach on the intermediate terrace remains as a valid assumption.

In the absence of detailed information we are unable to precisely reconstruct the history of human occupation at Coralville Lake. Further, limited floral and faunal remains from mixed assemblages weakens any attempt to state a comprehensive summary of settlement subsistence patterns. These factors notwithstanding, the following summary can be derived. Again, however, these generalizations will need to be tested from other locations in the Iowa River valley adjacent to the Coralville Lake locality.

The human entrada probably occurred some 10,000 or more years ago at Coralville Lake. At this time nomadic hunters and gatherers moved through the region depositing only minimal evidence of their presence. A few fluted and lanceolate points are found in the valley but there is no reason to infer any enduring or recurring habitation or

utilization. When these early residents did not find the valley to their liking cannot yet be firmly established. As more detailed environmental and ecological reconstructions are developed the answers to this primary research question will be resolved. At this juncture we can only establish that PaleoIndians made only sporadic and short-term use of the region.

By approximately 5-6000 years ago there was certainly increased population in the valley. Base camps were likely established at favored placed on the intermediate terrace along major streams confluent to the Iowa River. This would have provided immediate access to both the low terrace and floodplain of the Iowa River and to the uplands of the surrounding interfluves. Composition of populations at the base camps undoubtedly varied from time to time during the year with fluctuations in resource concentration. The scenario is one in which hunting and gathering bands would cluster on the intermediate terrace base camps during spring, summer, and fall and then disperse into smaller residential units during the winter months. At this time the focus of occupation was shifted to rock shelters and protected reaches of small tributary valleys.

Situating themselves on the intermediate terrace, Archaic residents occupied optimal locations of the stream and river confluences. Spawning fish, freshwater mussels, and a variety of small mammal and plant foods would have been immediately available from locations on the low terrace and floodplain. There is no significant evidence that so-called stations were established for fishing, fresh water mussel or other resource procurement. Rather, because of the close proximity of the intermediate terrace, it appears that resources were returned to the base camps for processing and consumption, and, subsequent disposition of refuse. the uplands would have provided abundant raw material for manufacturing of stone tools, large mammals, and various plant foods. Again, there is little evidence,

except in a few cases to infer that large functionally specific encampments were established in the uplands. Again, it is likely that raw materials were returned to base camp locations on the intermediate terrace.

There is little discernable variation in the distribution of Woodland settlements when contrasted with Archaic patterns. Populations, were undoubtedly larger as evidenced by the deposition of debris, site size, and site numbers. However, the pattern of established base camps on the intermediate terrace, now accompanied in a few instances by the construction of mounds, remains unchanged. At some time during the Woodland occupation, cultivated maize certainly became an element of the diet. The addition of corn horticulture in the suite of subsistence pursuits may have had the function of stimulating larger and longer occupied sumer settlements. However, we still see, based on site distributions, minor habitation on the low terrace and uplands.

By approximately A.D. 1,000-1,200, this reach of the Iowa River valley was largely abandoned. Why it was not suitable for Oneota occupation, patterns documented on the Des Moines and Upper Iowa Rivers, is not clear. Again, this is a research question that will have to be addressed through more sophisticated paleo-environmental reconstructions, and, additional investigations in other locations in the Iowa River valley.

One of the most obvious conclusions to be drawn from the management plan data is that PaleoIndian utilization of the Coralville Lake locality was minor. Further, evidence of these early occupants is restricted to the intermediate terrace. By Archaic times, evidence of habitation, likely a reflection of population size and density, is more substantial. Again, there is a decided preference for occupation on the intermediate terrace with clusters of sites situated at the confluence of streams with the Iowa River and at so-called inlets. Archaic habitations do occur

at other localities on the intermediate terrace. It is likely that during the period of occupation these terrace margins were in close proximity to the Iowa River which has since changed its course. Only transitory or ad-hoc use appears to have been the case in surrounding uplands and on the low and high terraces at Coralville Lake.

The Woodland pattern of occupation mirrors that of the Archaic. However, as one would expect, there are greater numbers of sites, and slightly more diversity in site location. In spite of this minor difference, it can be seen that throughout the Woodland continuum there is still a marked preference for utilization of the intermediate terrace, particularly at confluence and inlet settings.

Subsequent to Woodland times, the valley at this location appears to have been largely abandoned. This is a preferable hypothesis as we would expect that the highest frequencies of Oneota, Proto-historic, and historic aboriginal occupation, would continue to occur on the intermediate terrace. An alternative explanation for the low frequency of encampments, however, should be considered. It may be that the low terrace was a suitable location of post-Woodland settlements. This particular landform is now masked by substantial deposits of recent sediments. If low terrace occupation is considerable, it may have evaded detection because of the amount of post-settlement alluvium covering the archaeological deposits. This latter hypothesis suffers from a lack of significant data. Further, more than 75% of prehistoric occupational locations are situated on the intermediate terrace. If Oneota and historic residents had made significant use of the valley we would expect to find the most substantial evidence of their habitation on (in) this landform.

The same pattern is seen in historic times. Apparently, the Coralville Lake locality lacked certain requirements of historic period populations. Whether this can be determined to be a function of biological/geophysical

or socio/political factors remains to be resolved by future regional investigations.

In summary, the archaeology of Coralville Lake is largely confined to the periods between about 5-6,000 years and 1,000 years ago. A pattern of resource exploitation and residence location was established during the Archaic Traditions and seems to have changed in no major substantive ways throughout the Woodland Traditions. Certain stylistic changes in material culture have been documented, yet the adaptive strategies appear to have varied in no significant manner. The development of large horticultural villages witnessed in many other regions of Iowa and the surrounding great Lakes and Upper Mississippi valley regions did not occur at Coralville Lake. Nor, for that matter, did historic Indians establish significant communities within the project region. Understanding why the Coralville Lake region was unsuitable for both early and late prehistoric populations perhaps remains the most important line of inquiry in this segment of the Iowa River valley.

SUMMARY AND CONCLUSIONS:

This cultural resources management plan presents the rationale and legislative mandate for continued identification, evaluation, conservation, preservation, and interpretive efforts at Coralville Lake. The plan outlines in a phased manner the immediate and long-term priorities for effective cultural resource management. As the narrative and the allocation process (Figure 9) indicate, the plan is fully operational. However, the plan provides for tracking each site and property at Coralville Lake to a preservation, research, interpretation, or non-management category. To assist with planning implementation, Table 12 presents specific phases of implementation, priorities, and relative costs. Progress of individual sites and properties was provided at completion of the identification phase. Each site was coded within the framework of the 9 implementation taxa. For example, 13 JH 55 was reported by Zalesky in 1977, tested and found insignificant in 1983, and subsequently dropped from management concerns. This site is now coded $1.2.4.7.^{3}$.

In conclusion, two necessary concerns have been addressed. First, the plan was reviewed by appropriate agencies including the Office of the State Archaeologist of Iowa and the Iowa State Historic Preservation Officer. Second, artifacts and records from Coralville Lake have been dispersed in various repositories. Consideration now has been given to housing the records and cultural materials in a single repository near the project area. The most logical repository is the Office of the State Archaeologist of Iowa at Iowa City. Housing such materials at Iowa City would provide significant benefits to future researchers and to RID-COE managers.

TABLE 12: Priority and Cost Factors, Cultural Resource Management Plan Phases, Coralville Lake

Management Phase	Priority	Relative Cost
1. Identification	High*	High*
2. Evaluation	High***	High***
3. Integrity (+)	Moderate	Low
4. Integrity (-)	High	Low
5. Conservation	Low**	Moderate-High
6. Preservation	High	Low
7. No Management (destruction, experimental use)	High	Low-Moderate
8. Interpretation	High	Low-High (Variable options)
9. Adaptive reuse	High	Low

(* completed in 1985)

(** Only when preservation is not feasible, or, to fulfill research and management needs)

(*** completed Overstreet, Lurenz and Rosen 1986)

RECOMMENDATIONS:

The following recommendations for future investigations at Coralville Lake are presented in descending priority. These recommendations are specific and are directly focused to fulfillment of the objectives of the Coralville lake Cultural Resources Management Plan as outlined in this report and the accompanying 7 volumes. The recommendations represent the methods by which existing limitations may best be resolved. Finally, the recommendations are presented as distinct tasks which may be implemented either in a segregated or integrated manner. While the latter approach is probably most efficient, budget restraints likely prohibit such implementation. Finally, the highest priority for recommendations is that all future information and data collected be compiled in a manner consistent with those set forth in the management plan to assure comparability between past and future studies.

Interpretive Overview:

Emerson et al (1984: 33-37) developed a preliminary overview of cultural resources at Coralville Lake. This process was severely hindered by the sporadic nature of previous investigations, none of which were regional in scope. In addition, almost all survey investigations were strongly biased toward disturbed shoreline contexts where ease of discovery appears to be the primary determining factor for survey transects or blocks. The overview has been expanded from the perspective of completion of the Identification and Evaluation Phases at Coralville Lake. Major limitations in the overview, particularly with regard to interpretation for benefit of the general public, have been resolved. One of the ways in which this limitation was resolved was to focus on major collections that have been excavated at Coralville Lake. Surface collections are

useful to a point, however, frequencies of diagnostic artifacts are small, collections are dispersed, and data often poorly recorded. The major collections are not locally available and currently are housed by the Smithsonian Institution. Additional significant collections are housed at the Office of the State Archeologist University of Iowa, and at Great Lakes Archaeological Research Center, Inc.

These collections were subjected to analyses to identify components, photographic recording of artifacts was implemented, and the information then integrated within an updated overview for Coralville Lake. Three products were developed through this effort. First, overviews are typically directed to an audience of regional professional archaeologists. As a result, this necessary and important research tool reaches only a small group reflecting special interest of probably no more than 50-100 individuals. This, of course, is consistent with needs and objectives of legislative mandates and the needs of practitioners of anthropology, archaeology, history, geography, geology, and related disciplines. However, the overview process normally results in no significant benefit for the lay public. Thus, a second product of the overview process was a brief, liberally illustrated, popular summary of the Archaeology of Coralville Lake (Overstreet 1987). The emphasis here, much to the chagrin of theoreticians, was placed on material culture, culture history, and lifeways reconstructions. The rationale here is based on much experience that demonstrates that the interested public does not share much enthusiasm for archaeological jargon and general anthropological theory. Most people, however, are fascinated by the past, seek to understand and evaluate past lifeways, and do benefit by broad discussion of material culture and technology.

A third goal of the interpretive overview is the development of a program consisting of slides, narrative,

and artifacts for utilization by RID-COE staff for public presentation. Those who are involved on a day to day basis with management of the resource are well equipped to aid in management through public demonstration and communication. Finally, this was identified by Coralville Lake staff as an important tool to enhance management practices at the project.

Geoarchaeology;

Combined geomorphic and archaeological investigations have yielded highly significant results at Coralville Lake (Anderson and Overstreet 1985). Site distributions, radiocarbon assay, field and laboratory analyses, sub-surface trenching, coring, and hand excavation have operated to aid in development of a refined landscape model at Coralville Lake. We can now accurately assess the potential for encountering buried archaeological sites and can control for biases in any future survey investigations. The following narrative identifies depositional environments where intact archaeological deposits are suspected to occur. Readers are referred to Anderson and Overstreet (1986) (Geomorphic Investigations), Volume VI (Atlas), and Volume VII (Geomorphic Data File) for more detailed renderings of this information.

Alluvial Fans:

Alluvial fans represent areas of specific interest because burial of older surfaces often occurs. Fans appear to develop episodically in response to climatic change. That is, deposition of fan sediments tend to accumulate over relatively short time increments during periods when vegetation is adjusting to a new climatic regime. Deposition of fan sediments is usually followed by stability which promotes soil development. If erosion is not initiated on the fan, the surface may be preserved by subsequent burial from additional sediments.

Trench #2 of the alluvial fan entering the Hawkeye Wildlife area along the north valley wall illustrates episodes of fan development, stability, erosion, and continued aggradation (Anderson and Overstreet 1986). Initial fan development has buried a surface developed on vertical accretion silt and clay on the intermediate terrace. The age of this buried terrace surface is 10,090 + 190 BP. (BETA-14401). A second date obtained from a soil developed in fan sediments which filled the intermediate terrace paleochannel is 5120 + 170 BP.(BETA-14402). Since many fans are seen along the north end of the Hawkeye Wildlife area, preserved buried surfaces are likely to be found in these areas.

Interdunal Depressions:

Similar to the fans, these areas also promote sediment deposition. Trench #3 shows valley fill sediments that have apparently accumulated throughout the Holocene. The depression shows no evidence of gullying, consequently the valley appears to have accumulated sediments episodically when climatic changes promoted hillslope erosion. The episodes of valley fill are apparently separated by periods of stability. The evidence is seen in a paleosol developed in reworked loess about 1.5 meters from the surface yielding an age of 6230 + 160 BP. (BETA-14404). Consequently, these areas on the south end of the Hawkeye Wildlife area where numerous dunes are located, provide potential for preserved buried surfaces.

Low Terrace:

Evidence suggests that the low terrace has aggraded following abandonment of the intermediate terrace. This is seen in some of the subsurface investigations where buried vertical accretion deposits are overlain by additional point bar and overbank deposits. An organic enriched horizon seen about 1.0 meters below the surface at Hawkeye TR 8 G.S. 3

yielded a date of 510 + 70 BP (BETA-13536) (Anderson and Overstreet 1985). This enriched horizon is buried by an episode of lateral and vertical accretion sediments from which the present solum is developed. Since the low terrace has been active for much of the last 3950 YBP (BETA-13535), potential for burial from floodplain aggradation is high.

Tributaries Entering the Hawkeye Wildlife Area:

These areas were not specifically addressed in the Coralville geomorphological study, but it is evident that these areas provide a high potential for preserved site burial. In a terrace bank exposure where Swisher creek enters the Hawkeye just south of "County Road E", the presettlement soil was capped by about 0.5 meters of historical sediments. Below the presettlement solum was a paleosol of unknown age. These areas along the northern margin of the Hawkeye Wildlife area where tributary terraces, alluvial fans, and main valley terraces coalesce are suspected to contain a high potential for preserved buried surfaces.

Tributary Reaches in the Iowa River Gorge:

A fourth order drainage was investigated in 1985 (Anderson and Overstreet 1985) with 3 valley cross sections studied. Where the valley walls rapidly widen, valley fill sediments tend to accumulate providing a high potential for multiple stable surfaces. However, these areas and subsequent buried surfaces seem to occupy a very small proportion of the total valley area and must be dealt with site specifically. In contrast, tributary reaches where valley constrictions occur promote repeated episodes of scour and appear to provide limited potential for surface stability representing considerable age.

Future site seeking and geomorphic investigations should focus on the previously identified localities. In addition, these contexts represent localities where proposed

construction projects or erosion can be expected to reveal and destroy important remaining components of the archaeological data base at Coralville Lake. While the priority for investigation is not as immediate as those previously discussed, future evaluation of archaeological sites and contexts of deposition will undoubtedly yield significant data relating to human occupation and utilization of the Iowa River valley. In addition, it is in these localities that sediment chronologies and the effects of man and climate on the landscape can most efficiently be studied. Subsequent to evaluation of existing site priorities, attention should be focused on locating and evaluating buried sites. Research design development should minimally include questions relating to Holocene chronology of landscapes, climatic reconstructions and associated floral and faunal communities, and man's relationship to land, climate, and natural resources.

Interpretation:

Consideration should be given to developing a long range interpretive plan for Coralville Lake cultural resources. Beyond the immediate interpretive needs outlined in an earlier discussion, future interpretation should include on-site exhibits, pamphlets, and exhibit enhancement at the project Visitor Center.

Memoranda of Agreement:

Agencies that could effect the management of archaeological sites at Coralville Lake need to be made aware of the importance of cultural resources. In particular, Lake Mac Bride State Park and the Hawkeye Area are localities where various construction projects, maintenance activities, agriculture, and other practices provide opportunities for degradation and disturbance of the resource base. In consultation with the Iowa SHPO, RID-COE should implement a memorandum of agreement with appropriate

agencies (e.g., ICC) to establish procedures for compliance with cultural resource management practices.

An additional Memorandum of Agreement should be developed to house artifacts, notes, and data from Coralville Lake at a single institution. Perhaps the most appropriate facility is the Office of the State Archaeologist of Iowa. The facility meets current standards, is in close proximity to the project locations, and has adequate staff to curate information on a long-term basis. There is no question that housing the results of many years of investigation at Coralville Lake in a single repository would benefit managers as well as future researchers. Finally, the memorandum should address such issues as a master catalog, conditions of access to records and materials, a library of reports and publications relevant to Coralville Lake archaeology, and periodic inspection and recording--essentially the major elements of a curation agreement.

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