

DRAFT

Protecting Our Past

Cultural Resource Management in Pima County

Sonoran Desert Conservation Plan

May 2001



Pima County, Arizona Board of Supervisors

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County Administrator

Chuck Huckelberry



MEMORANDUM

Date: May 21, 2001

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator 

Re: **Protecting Our Past**

Background

Cultural resource management is an outgrowth of the historic preservation movement in this country and has its origins in the passage of the National Historic Preservation Act in 1966. It was through this law that a set of standards, procedures, and guidelines were developed to protect and manage the nation's cultural resources. The term "cultural resources" refers collectively to all archaeological sites of prehistoric and historic origins, historic districts, sites, buildings, and objects, and places of traditional cultural value.

The attached study entitled *Protecting our Past* by Mr. David Cushman of Pima County's Cultural Resources Office reviews strategies and programs that have developed to manage cultural resources on public lands in Pima County, Arizona. The purpose of the study is to describe programs and recommend ideas that may enhance resource protection at the regional level. Public lands and the cultural resources they contain will play an important role in the Sonoran Desert Conservation Plan and thus understanding how these resources are currently managed will assist in the planning process. Issued in draft form, *Protecting our Past* is intended to foster a dialogue among government land managers to improve regional cultural resource strategies.

Findings

Cultural resource management is almost 30 years old in Pima County. Of the 1,658,958 acres of public lands in eastern Pima County, only 8.7 percent has been investigated for cultural resources. A total of 2,422 archaeological sites from all time periods have been recorded; twenty historic resources and three traditional cultural places are also known.

In western Pima County, only 1.2 percent of the 968,322 acres of public land has been investigated and a total of 269 archaeological sites, eight historic resources, and two places with traditional cultural value are known.

Public lands in both eastern and western Pima can be characterized for archaeological sensitivity. When comparing the two, eastern Pima County has higher percentages of lands with low sensitivity for archaeological sites while western Pima County has higher percentages of land with high and moderate sensitivity for archaeological sites.

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The cultural resource management programs vary considerably across the region as a function of differences in mission, legal mandates, and agency history. Some programs are compliance oriented and exist primarily to meet the requirements under law. Other programs include resource protection and public education. This is true, for example, of the National Park Service and Arizona State Parks programs. Still a third program type mixes both compliance with proactive resource management and protection; these include the United States Forest Service and the Bureau of Land Management. Differences in legal mandates, the degree to which cultural resources on the public lands are included in planning, and the way land is used and can be used, also effects whether cultural resources are protected and to what degree. On private lands, whether, and to what extent, cultural resources are protected varies among local governments.

Suggestions for the Next Steps in the Planning and Program Design Process

Variability in meeting individual agency mandates and a historical tendency to focus only on those resources that are the immediate responsibility of a particular agency has produced a patchwork of management effectiveness across the landscape. This is exacerbated by a lack of adequate baseline data on the resources and the growing regional scope of the threat to those resources. Limitations on funding and staffing have precluded effective large scale, long term planning and management. For these reasons, a regional strategy for cultural resource management is the best means of achieving not only resource protection but also management goals and responsibilities. To that end, the following suggestions are presented.

- Just as a biological Adaptive Management Plan is being created, government partners to the Sonoran Desert Conservation Plan should develop common management goals and strategies together. This should include a means of increasing the quantity and quality of baseline information through additional surveys, sampling and model building.
- Data on all cultural resources should be shared and centralized so that each agency can access it and use the same kind of data in the same format for planning purposes. The Arizona State Museum's AZSITE data base is perhaps the best means of achieving this goal.
- The Arizona Site stewards program should be supported and utilized by all agencies in a concerted effort to prevent looting of archaeological sites. Likewise, coordinated law enforcement on the public lands would more effectively protect cultural resources.
- Upon implementation of the Sonoran Desert Conservation Plan, a regional advisory group, perhaps an outgrowth of the Cultural Resources Technical Team, should be formed, consisting of representatives of all agencies with cultural resources management program for the purpose of refining common management strategies, developing policy recommendations and coordinating actions.

The attached study indicates that the scale of the management problem is regional in scope but that the way cultural resources management is currently conceived and practiced has not yet reached this level. A change in both the theory and method of cultural resources management is needed in Pima County, one that involves inter-agency cooperation and coordination.



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I. Introduction

I. A. Purpose of Report

The purpose of this report is to provide a review of cultural resources management on the public lands as currently practiced in Pima County, Arizona. Cultural resources include archaeological sites, historic resources, and places of traditional cultural value as defined in Appendix A. These resources collectively are a product of, and reflect upon, the history and culture of the citizens of Pima County over the past twelve millennia. They are finite and non renewable in the sense that there are only so many ancient village sites, historic ranch houses, and natural features that are important to Native American origin myths. Once these places are removed from the physical landscape they are no longer a part of the cultural landscape. They are also fragile; natural and man made agencies combine to erode and degrade and destroy these resources on a daily basis. Cultural resources can have scientific, educational, recreational, aesthetic and spiritual values and because they are fragile and limited in number, the public has an interest in their management for the future. That interest is being met on the federal, state, and local level in Pima County in accordance with law and policy with varying degrees of efficacy. This report examines which agencies are responsible for cultural resource management (CRM), when they began their programs, how management is conducted, and the challenges that must be met in order to achieve the goal of preserving and protecting cultural resources for future generations.

The impetus for this report is the planning that is currently being conducted by Pima County for the Sonoran Desert Conservation Plan (SDCP), a regional growth management plan that will involve and affect both public and private lands in Pima County. Since much of the land in eastern Pima County is administered by governmental agencies at the federal, state, and local level, the public lands will figure prominently in what ever form the final conservation plan takes. Cultural resources will be a part of the that plan and so understanding how cultural resources are currently managed and what can be done to enhance their protection for the future will contribute to the overall planning for the SDGP.

I. B. Organization of Report

The report is divided into nine sections. Section II provides a brief historical summary of historic preservation and cultural resource management in the United States focusing on legislative developments. Section III addresses what Pima County's partners in preservation are doing to meet their responsibilities in cultural resource management within the county limits. The CRM programs of each agency are described including a brief history, the laws under which the program is authorized, current management practices, program needs and priorities, and management goals for the future.

This is followed by a more in-depth review of Pima County's own cultural resources program in Section IV and includes detailed recommendations for program changes that will enhance the county's ability to both preserve and conserve cultural resources under its administrative control.

Section V examines all programs together and provides information on known cultural resources by agency, estimates the relative sensitivity of public lands for archaeological sites, presents a comparative analysis of the CRM programs in Pima County and ends with an evaluation of cultural resources protection for both public and private land in Pima County.

In Section VI, recommendations for changes in the practice of cultural resource management in Pima County are presented, and concluding remarks are given in Section VII. References and sources consulted are listed in Section VIII and finally four appendices are presented in Section IX.

Note: To facilitate discussion, the six federal and two state agencies evaluated for this study plus the two local governments with CRM programs are all referred to as "the agencies." In addition, while State Trust lands are technically not public lands, they are referred to as such to distinguish these lands from private property.

I. C. Sources of Information

The principal source of information on cultural resource management programs in Pima County comes from the staff in each organization that has CRM responsibilities. The staff contacts are identified in Appendix B included at the end of the report. Each agency contact was either interviewed directly or asked to answer an interview questionnaire developed for this report. The interview questions and the responses are presented in table form in Appendix D. The information provided by the agency contacts is supplemented by management documents that were consulted during the preparation of this report. Data on the extent of known archaeological sites and survey coverage was provided by the Arizona State Museum (ASM) and comes from the AZSITE database, an electronic version of ASM's paper survey and site files. These records represent the primary source of information on archaeological sites and surveys in the region. It is important to note, however, that not all agencies share data with the Museum, and for this reason, some of the figures used in this analysis may under count the data held by individual agencies. The very sparse information on historic resources and traditional cultural places was accessed in the cultural and historical resource element report prepared by Pima County and release in August of last year (Pima County 2000).

II. Background - Historic Preservation and Cultural Resource Management

Historic Preservation can be defined loosely as the act of saving those places and things that are associated with the history and culture of a people; it's really a global movement that began in earnest in the 18th and 19th centuries (Cleere 1989). In the U.S., the earliest preservation efforts were focused on the houses of famous people, such as George Washington's home at Mount Vernon, Virginia, or places of importance in the country's history such as revolutionary and civil war battlefields. It wasn't until the end of the 19th century that archaeological sites became the focus of preservation efforts. With the opening of the West to migration, an abundance of cultural and natural resources were discovered exciting the imagination of people across the country, and steps were taken to protect and manage these places. Congress set aside the land for Yellowstone National Monument in 1872, and in 1892, the nation's first archaeological reservation was created to protect the Hohokam site at Casa Grande, Arizona (Freidman 1991).

While the vastness of the land and the richness of its resources were being realized, looting and vandalism of cultural sites also began to be a problem. Fabulous ancient ruins such as those as Mesa Verde in Colorado and Chaco Canyon in New Mexico suffered terribly for some time at the hands of collectors before congress was convinced of the need to take action. That action occurred in 1906 with the passage of the Antiquities Act (16 U.S.C. 431 et seq.), the first piece of preservation legislation in U.S. history (Friedman 1991).

The Antiquities Act of 1906 established fines and imprisonment for damage to, or appropriations from, archaeological sites located on federal land; established a permitting system for legitimate investigation; and, authorized the President to create National Monuments for the purposes of preservation. President Clinton's recent decision to create the Ironwood Forest National Monument in Pima and Pinal Counties, Arizona, is only the latest use of the power of this law.

During the 1930s, several major preservation initiatives were started in spite of the hard times that the nation experienced. The Works Project Administration funded architectural surveys, archaeological excavations and restoration projects all across the county. In 1935 the Historic Sites Act (16 U.S.C. 461 et seq.) was also passed, establishing the Historic American Building Survey and the Historic American Engineering Record, two programs designed to record the nation's architectural and engineering achievements that are still in existence today. The Act also created the National Historic Landmark program, an honor roll of places of great historic value to the American people. After the end of World War II, the country experienced both a baby boom and a concomitant construction boom unprecedented in American history. It was during the 1950s and 1960s when large scale damming of the nation's rivers commenced, the interstate highway system was started, and urban renewal of the old city centers began to transform the character of urban life in the downtown areas. In reaction to these trends, and in response to growing concerns about the environment in general, Washington began passing major pieces of preservation legislation starting in 1960 (King 1998).

In that year, the Reservoir Salvage Act (16 U.S.C. 469 et seq.) was passed. This law recognizes that

the federal government has a responsibility to protect the nation's cultural resources from destruction due to government action; up until this point, there was no formal recognition of this responsibility. Then in 1966, two pieces of legislation were passed that changed the nature of historic preservation in this county. The first of these is the Department of Transportation Act (49- U.S.C. 303 et seq.), which has in it a very small clause that says, in effect, that the government cannot harm or destroy historic and archaeological sites "unless there is no prudent and feasible alternative," and unless there has been "planning to minimize harm" to these sites (Section 4 (f)). The value of this statement is substantial because it puts the government in the position of having to anticipate the need for preservation planning as part of any federally funded highway project, and moreover, it requires the government to demonstrate that there is no other alternative, should a site or sites be impacted during construction. Then, in the same year, President Johnson signed into law the National Historic Preservation Act (16 U.S.C 470 et seq.) (NHPA).

The NHPA establishes the foundation for the nation's historic preservation program (King 1998). Under Section 106 of the Act, federal agencies are required to "take into account" the effect of their actions on cultural resources (referred to as historic properties) that are eligible to or listed in the National Register of Historic places; and, to provide the Advisory Council on Historic Preservation a "reasonable opportunity to comment." The law created the National Register as the country's honor role of important places, augmenting the old National Historic Landmark program; it created a State Historic Preservation Officer (SHPO) in every state and territory for the purpose of providing the citizens a role in reviewing federal actions that may affect historic properties in those states and territories; and, it also created the federal Advisory Council on Historic Preservation, which acts as a regulatory oversight agency and issues the regulations that make Section 106 of the Act work. Lastly, the law set up a funding source generated by off-shore oil reviews so that the SHPOs can carry out their duties mandated under the law. Through this single piece of legislation, the relationship between the federal agencies, the SHPOs, and the Advisory Council was defined and became the basis for how historic preservation is conducted in the United States.

The last big piece of preservation legislation of the 1960s is tucked into the nation's premier environmental law. In 1969, President Nixon signed into law the National Environmental Policy Act (42 U.S.C. 4321 et seq.) (NEPA), which guides most federal actions. Inside the regulations implementing this monumental law are provisions that link federal compliance with NEPA to their responsibilities under several other laws including the National Historic Preservation Act (40 CFR 1500-1508). This is very significant because most federal agencies are "NEPA driven" and hence must also comply with the National Historic Preservation Act.

The 1970s were no less important and the gains that were made during the 1960s were consolidated. In 1974 the Archaeological and Historic Preservation Act (16 U.S.C 469 et seq.) was passed to augment the Reservoir Salvage Act of 1960. The old law said the government has a responsibility to preserve sites from destruction resulting from federally funded water impoundment projects. The new law required that the level of funding for preservation had to be commensurate with the level of damage to cultural resources caused by governmental action. Federal agencies were authorized to use up to one percent of a project's costs for this purpose. The other big law of the 1970s was

the Archaeological Resources Protection Act (16 U.S.C. 470aa et seq.), which was designed specifically to upgrade and make effective the old Antiquities Act of 1906. Passed in 1979, the new law clarified the legal prohibitions against unauthorized disturbance to, and appropriation from, archaeological sites; created a new permitting process for legitimate research, requires consultation with Indian tribes when conducting archaeological investigations on Indian land, and packed in some serious criminal and civil penalties for violation (King 1998).

With the notable exception of tax reform legislation affecting historic buildings, federal historic preservation law pretty much took the decade off during the 1980s. During this time, however, many states and local governments passed their own versions of historic preservation laws. For instance, Arizona enacted the State Historic Preservation Act in 1982, which mimics the NHPA for actions on lands that are controlled by the state or its subdivisions, including Pima County. There was only one major piece of federal preservation legislation passed in the 1990s. The Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 et seq.) requires, among other things, that federal agencies consult with tribes about the disposition of human remains and associated graves goods whenever human graves are discovered through federal actions on federal or Indian land. Also in 1990, the National Park Service published a set of guidelines addressing federal agency responsibilities to consider Native American traditional cultural places in meeting the requirements of the National Historic Preservation Act and other federal laws (National Park Service, 1990). While not a law, these guidelines have had far reaching effects in what federal agencies must consider in planning for public projects that may disturb places of concern to tribes and other traditional communities across the country.

Lastly, a series of executive orders signed by President Clinton has augmented historic preservation law. Executive Order 13006 issued in 1996 requires that federal agencies utilize historic buildings and other facilities where possible to enhance their preservation, and Executive Order 13007, issued that same year, requires that federal agencies avoid impacts to Native American sacred sites on federal or Indian lands and to enable tribal use of these places.

Taken together these laws reflect almost a hundred years of commitment on the part of the federal government to preserving the nation's cultural resources. The National Historic Preservation Act of 1966 was a seminal piece of legislation that in theory brought together two historically separate preservation agendas: the effort to protect historic buildings and the effort to protect antiquities, or archaeological sites (King 1998). In 1972, however, professional archaeologist, attempting to describe the work that they were doing under the new federal mandates, coined the term "cultural resource management" (Lipe and Lindsay 1974). As a result, CRM became equated with public archaeology, although never exclusively. Over time, the scope of CRM has expanded to include the full spectrum of cultural resources and wide variety of investigatory practices. Cultural Resource Management today is largely compliance driven following the process established in 36 CFR 800, the regulations that implement the National Historic Preservation Act.

The steps in regulatory process involve defining the project area, checking records for information on known cultural resources, conducting inventories of the project area to locate new cultural

resources if needed, evaluating the resources for their eligibility for listing in the National Register of Historic Places, determining whether National Register eligible resources will be adversely affected by the proposed federal action, and treating the effects of the proposed action in a manner that meets standards and guidelines developed by the Secretary of the Interior. This process is reactive as established under Section 106 of the law, meaning that they are only followed when a project is proposed. However, under Section 110 of NHPA, federal agencies also have a proactive responsibility to locate and identify and list cultural resource in the National Register that are under their administrative control so that they can be properly managed for the future.

Cultural resource management is the principal means by which the goals of historic preservation are achieved in the United States. It involves both reactive and proactive elements, although it is the former that is often the priority in cash strapped agencies these days. While the National Historic Preservation Act played a central role in establishing the nation's historic preservation program, and was instrumental in creating the field of cultural resource management, it is compliance with the total body of historic preservation law and regulation on the federal, state, and local levels that constitutes cultural resources management as it is practiced today.

III. Federal, State, and Municipal CRM Programs in Pima County, Arizona

This section presents a brief summary of each organization that has either a CRM program or responsibilities for cultural resource management in Pima County. At the end of the section are two maps that show the location of the lands administered by the agencies evaluated in this study. The maps are entitled, "Agency Lands for Eastern Pima County" and "Agency Lands for Western Pima County" respectively. Tribal lands and private lands are not included. As is evident, Pima County is dominated by public lands.

Note: The laws and regulations referred to in this section are those that were identified by the agency personnel interviewed for this study as the most important to their CRM programs; other laws affecting cultural resources may apply. For a complete discussion of this and other subjects, see the interview results in Appendix D.

III. A. Bureau of Land Management (BLM)

1. History

The Bureau of Land Management (BLM) has approximately 14.2 million surface acres under its administrative control in the state of Arizona. It is a multiple use land agency meaning that a wide variety of uses of the public lands are permitted ranging from development of energy and mineral resources to recreation and public education. The BLM began a cultural resources management (CRM) program in the early 1970s. At first, the area now making up the BLM's Tucson Field Area, was under the purview of the Phoenix District Office. The Tucson Field Office opened in 1992. The purpose of the Bureau's CRM program is to preserve and protect the cultural resources for conservation, scientific, public and traditional uses and involves both reactive regulatory functions and proactive preservation functions. The central mission of the program has not changed. Two archaeologists are employed; one in Tucson and the other at the San Pedro River National Conservation Area.

2. Authority - Laws

- Antiquities Act of 1906
- Archaeological and Historic Preservation Act of 1974
- National Historic Preservation Act of 1966
- National Environmental Policy Act of 1969
- Federal Land Policy Management Act of 1976
- Native American Graves Protection and Repatriation Act of 1990
- American Indian Religious Freedom Act of 1978

The Federal Land Policy Management Act of 1976 is the agency's organic act creating the Bureau of Land Management in its modern form. It provides the rationale for cultural resource management. The BLM's cultural resource management program operates under policy guidelines provided in its

Manuel 8100 series and in accordance with a Programmatic Agreement among the BLM, the State Historic Preservation Office and the Advisory Council on Historic Preservation that guides how the agency is to meet its responsibilities throughout the state of Arizona.

3. Current Practices

The BLM's cultural resources staff engage in planning activities and conduct reviews of both internal agency projects as well as requests from private companies to use the public lands. Much time during the past few years has been spent planning for the Las Cienegas National Conservation Area Resource Management Plan, the Baboquivari Peak Wilderness Area, Middle Gila Management Area and numerous public meetings involving these areas and activities have been held. The BLM's Tucson Field Area has also been involved in planning and development of a historic preservation project at the Empire Ranch House/Headquarters in the Cienega Valley. Undertakings initiated by non-federal entities include construction of fiber-optic, natural gas, electric, telephone and water lines, roads and land exchanges. Participation in investigations involving damage to archaeological sites in violation of the Archaeological Resources Protection Act (ARPA) are also undertaken by the CRM staff. In-house agency sponsored projects average about ten per year. Those involving non-federal entities average around twenty to twenty-five per year. Some involve large parcels of land with high densities of archaeological sites and other cultural resources.

Much of the work done by the BLM archaeologists is funded by other programs, and typically involves review of plans for compliance with federal law. In the Tucson Field Area, some funds have been used for preservation work at the Empire Ranch Headquarters. A portion of these funds were obtained through the Save America's Treasures program and matched with funds from the Empire Ranch Foundation. Other proactive preservation projects that the Tucson Field Area office is involved in include organizing volunteers in planning and preservation projects at the Empire Ranch House, creating interpretive brochures on the prehistory and history of the area, and working with the Arizona Site Steward program to help monitor vulnerable archaeological sites.

While there is no single cultural resource management plan for the Tucson Field Area, the agency is in the process of completing a resource management plan for Las Cienegas National Conservation Area, and is preparing to write a management plan for the Ironwood Forest National Monument. In the future, management plans will be written for other geographical areas within the Tucson Field Area and cultural resource project plans will be written for specific sites/cultural resources or particular areas where numerous sites or cultural resources are located, as identified through the management plan process.

4. Needs and Priorities

The number one identified need for the CRM program is more cultural resource inventories throughout the Tucson Field Area. Currently, most inventories are done to comply with Section 106 of the National Historic Preservation Act. However, much of the land that the BLM is responsible for managing has not been formally investigated meaning that the CRM staff does not have a

comprehensive understanding of the resources they are responsible for protecting. At the moment, the most immediate need is an inventory of the Ironwood Forest National Monument. Lack of adequate workforce is also identified as a problem especially in light of the new management responsibilities associated with the new monument. The greatest threat to cultural resources within the Tucson Field Area relates to the explosive population growth in Tucson/Pima County and the attendant impacts to nearby BLM lands.

5. Management Goals

Management goals include the conservation, preservation, interpretation, and research of cultural resources.

III. B. United States Forest Service (USFS)

1. History

The Coronado National Forest covers approximately 1,780,196 acres and is divided into five ranger districts covering twelve mountain "islands" in the desert of southeast Arizona and southwest New Mexico. The Forest Service hired an archaeologist for the Southwest Region in 1976. Working out of the Regional Office in Albuquerque, he assisted the Coronado in complying with the National Historic Preservation Act and other laws and regulations then in existence. The Coronado hired its first archeologist in the late 1970's and regulatory compliance remained the focus of the program for many years.

Toward the end of the 1980's, increased funding enabled the expansion of the cultural resources program. The Southwest Initiative and the America's Great Outdoors Initiative provided the first substantial funds for more proactive activities including interpretation and enhancement of historic properties. Interpretive signs, trails and guidebooks were developed for sites throughout the Forest. In Pima County, the Forest initiated a cooperative program with the Center for Desert Archaeology and Catalina State Park to stabilize and interpret Romero Ruin. At Kentucky Camp, the Forest funded restoration and interpretive planning for an early twentieth century mining camp.

The 1990s were marked by increased public involvement in the Heritage Program. Indeed, the Forest Service adopted "Heritage" as the program title in the early 1990s, in part to reflect a new emphasis on the public values of the resources under its care. During this time, the agency has worked to forge working relationships with a number of Native American tribes that have concerns regarding cultural resources, and the agency regularly consults with the Tohono O'odham, San Carlos and White Mountain Apache, Mescalero Apache, Fort Sill Chiricahua-Warm Spring Apache, and Pueblo of Zuni. At present, the Forest Service Heritage program has two full time, and three part time employees.

2. Authority - Laws

- National Historic Preservation Act 1966
- National Environmental Policy Act 1969
- National Forest Management Act 1976
- Native American Graves Protection and Repatriation Act 1990
- American Indian Religious Freedom Act 1978
- Antiquities Act of 1906
- Historic Sites Act of 1935
- Archaeological and Historic Preservation Act of 1974
- Archaeological Resources Protection Act of 1979
- Executive Orders 12898, 13007, and 13175

In addition to these laws, the cultural resources program is directed by the Forest Service Manual, and agreements exist with the State Historic Preservation Office and Several Native American tribes that effect how the agency meets its obligations. In addition, the agency receives direction from the Regional Office and National Office through the planning and budgeting process.

3. Current Practices

The Forest Service CRM program becomes involved in a variety of actions on forest lands including prescribed burns, road construction/reconstruction, range allotment improvements, facility construction/improvements, hazardous material clean-up, and land exchanges. Typically, between 60 and 100 actions are handled by the staff in a year. However, the program is involved in much more than legal compliance and has developed a strong proactive component. For example: (1) the Forest works with the Arizona Site Stewards program to patrol and protect sites; (2) it holds at least one "Passport in Time" project each year, in which volunteers from all over the country come work on the Forest's heritage resources (past examples involving sites in Pima County include recording historic recreation features at Sabino Canyon, doing adobe building stabilization and restoration work at Kentucky Camp, recording prehistoric and historic sites in the Santa Rita Mountains); (3) it works with volunteer groups and the University of Arizona architecture department to restore other historic structures (e.g. Coronado Camp, Lowell Ranger Station); (4) it surveys areas and inventory sites not related to project compliance; (5) it nominates significant properties to the National Register of Historic Places; (6) it provides public interpretation of the prehistory and history of the forest, e.g. at Sabino Canyon Visitor Center, or in interpretive signs along the Mt. Lemmon Highway, or along the Arizona Trail; (7) it works with adobe & conservation experts from the State Historic Preservation Office, the National Park Service, the Instituto Nacional de Antropologia e Historia and the Universidad de Sonora to learn and develop preservation techniques; (8) it has collected oral histories from former Japanese American internment resisters who were incarcerated at the old prison camp on Mt. Lemmon, and developed an interpretive trail and kiosk there; (9) it is beginning to work with tribes to identify and protect traditional properties and important traditional plants; and (10) members of our Heritage Resources staff have given papers and presentations about forest CRM topics at professional meetings.

4. Needs and Priorities

A pressing need for the Coronado Heritage Program is to revise the goals, objectives, standards and guidelines in the Forest Plan to reflect legal and social changes that have occurred since 1990. First, program goals, standards and guidelines need to formally recognize the increasing importance of consultation with Native American tribal governments required by law and regulation. Second, intergovernmental cooperation in general would be facilitated by increased coordination with state and local plans such as the Sonoran Desert Conservation Plan. Third, revisions to standards and guidelines could further improve the balance between regulatory compliance and pro-active interpretation and enhancement. Fourth, specific goals and objectives are needed for themes that currently are under-represented, such as Native American traditional culture and Japanese-Americans at the prison camp on the Mount Lemmon Highway. Apart from and above these needs and priorities is the need for adequate funding to accomplish Heritage Program goals. Flat or declining budgets in the 1990s are increasingly constraining the Forest's ability to protect its heritage resources from the effects of time (weathering and erosion are the biggest threat to resources, followed by deliberate vandalism and unintentional damage). More significant, opportunities to inform and educate future generations about their heritage are being foregone.

5. Management Goals

Goals for the Coronado Heritage Program are based on the Coronado National Forest Plan, which was completed in 1986. Fiscal Year 2001 budget advice from the Southwestern Regional Office instructs the Forest to formally initiate revision of the Forest Plan this Fiscal Year.

The 1986 Plan has, as the core issue for what were in 1986 called cultural resources, "The amount of time and investment to [*sic*] interpretation of cultural resources." Forest-wide goals were amended in 1992, and are:

- Inventory, protect, manage, and interpret cultural resources.
- Identify, evaluate, and nominate cultural resource sites to the National Register
- Provide for the active management of cultural resources to serve as a source of knowledge about the nation's cultural heritage, to provide recreational opportunities for the public, and to facilitate the management of other forest resources.
- Protect significant cultural resources from damage by project activities or vandalism.
- Encourage protection of non-federally owned cultural properties located within or adjacent to National Forest boundaries.

III. C. National Park Service (NPS)

1. History

The National Park Service, Saguaro National Monument was established in eastern Pima County in 1933. Boundary expansion over the years led to designation of the area as a National Park in 1994.

Organ Pipe Cactus National Monument was established in the west side of the County in 1937.

The Southwest Archaeological Center was established in Globe in 1952 to serve parks and monuments in southern Arizona. The Center moved to Tucson in the 1970s and was renamed the Western Archaeological Conservation Center. Identification and protection of cultural resources and collections are the focus of agency's CRM activities in Pima County but the Center also is involved in education and training. Staff archeologists provide CRM services to the parks in Pima County. These services range from compliance surveys and documentation, to designing archeological projects, to curation of artifacts and archives, slide talks and field trips.

Inventory survey at Saguaro National Park in the 1980s and 1990s has led to coverage of almost 30 percent of the park with more than 460 sites recorded. A large part of the Rincon Mountain Unit of Saguaro National Park, about 20 square miles, is on the National Register of Historic Places as the Rincon Mountain Foothills Archeological District. The Manning Cabin, summer home of L.H. Manning, Territorial Period Mayor of Tucson, is also on the National Register.

Inventory of Organ Pipe Cactus National Monument covers only about two percent of the land. Three hundred sites are reported but only about 250 are recorded to modern standards. The National Register sites at Organ Pipe include several mines and ranching line camps.

2. Authority - Laws

- National Historic Preservation Act of 1966
- Archaeological Resources Protection Act of 1979
- Native American Graves Protection and Repatriation Act of 1990
- Antiquities Act of 1906

The agency's CRM program is also guided by internal policy and a Programmatic Agreement exists with the State Historic Preservation Office governing compliance with certain portions of 36 CFR 800, the regulation implementing Section 106 of the National Historic Preservation Act.

3. Current Practices

Currently the National Park Service CRM program for the parks in Pima County is project driven with 5 - 10 compliance actions per year requiring consultation with the State Historic Preservation Office, tribal groups, and other parties in compliance with legal mandates. Inventory of cultural resources and stabilization of archaeological sites and historic resources are also conducted as needed.

Both Saguaro National Park and Organ Pipe Cactus National Monument have resource management plans in draft form that describe the character and extent of cultural resources and recommend strategies for their future protection and management. The National Park Service maintains its own site records and data bases but also files all site records with the Arizona State Museum. The

Arizona Site Steward program is active at both Saguaro National Park and Organ Pipe Cactus National Monument.

4. Needs and Priorities

Additional inventory is needed to fully identify the cultural resources at Organ Pipe Cactus National Monument. Areas needing survey at Organ Pipe Cactus include campgrounds, trails and other visitor destinations. Non project specific inventory mandated under Section 110 of the National Historic Preservation Act is needed to expand our knowledge of the archeology of the park and to assist with management and protection of these resources.

Because much of the terrain at Saguaro National Park is steep mountain slopes, the 30 percent coverage of Saguaro is sufficient for understanding the prehistoric and historic cultural resources and for providing NPS with the data to protect, manage and provide routine compliance support.

The greatest threats to cultural resources are urban encroachment (Saguaro National Park) and border issues (Organ Pipe Cactus National Monument) resulting in cultural resource theft, vandalism, and related impacts. Stabilizing historic cultural resources is a management priority. There is also interest among Pima County and NPS cultural resource managers in developing a cultural landscape nomination for the Depression era Civilian Conservation Corps features found in both the county's Tucson Mountain Park and the Tucson Mountain District of Saguaro National Park.

5. Management Goals

CRM goals for the NPS program in Pima County include further archeological inventory at Organ Pipe Cactus National Park, nomination of the Civilian Conservation Corps features at Tucson Mountain Park and Saguaro National Park to the National Register, collections and archives management, site stabilization, and continued compliance with existing historic preservation law. Funding has been acquired to develop a Geographic Information System component for the cultural resources of Saguaro National Park.

III. D. United States Fish and Wildlife Service (USFWS)

1. History

The United States Fish and Wildlife Service is the principal Federal agency for conserving, protecting, and enhancing fish, wildlife, plants, and their habitats. The agency accomplishes this through partnerships with non-Federal landowners and agencies, state and municipal governments, and tribes. The agency also manages the 93 million acre National Wildlife Refuge System. The agency enforces Federal wildlife protection laws and recovery efforts, international treaties and agreements for wildlife, and assists foreign governments with their conservation efforts.

The USFWS has been active in Arizona since the mid-1930s. There are eight National Wildlife

Refuges, three Fish Hatcheries, and one ecological services field office in Arizona. In Pima County, the Cabeza Prieta National Wildlife Refuge was established in 1939 . The Buenos Aires National Wildlife Refuge was established in 1985 and there have been several additions to the Refuge since. The Cabeza Prieta Wilderness Area was established in 1990.

The agency began its cultural resource management program in the late 1970s with the hiring of personnel (1) for the Southwest region. The reason for establishing the program was to comply with the provisions of the National Historic Preservation Act and other federal legislation. Since that time, the purpose of the program has remained unchanged. The agency CRM staff member works out of the US Fish and Wildlife Service Albuquerque office.

2. Authority – Laws

- National Historic Preservation Act of 1966
- Archaeological Resources Protection Act of 1979
- Native American Graves Protection and Repatriation Act of 1990
- American Indian Religious Freedom Act 1978
- Executive Order 13007

Cultural resource management is also governed by internal policy under the Fish and Wildlife Service Manual.

3. Current Practices

The CRM program is entirely project driven averaging 12 -15 actions per year; these typically relate to habitat development, restoration, engineering projects, land exchanges and occasionally historic building demolitions. Compliance with historic preservation laws is governed by internal management guidelines for the agency; however, there is no mandate to manage cultural resources beyond that which is required under law. None of the management units in Pima County (Buenos Aires and Cabeza Prieta) has a cultural resources management plan. The US Fish and Wildlife Service uses the site data base maintained by the Arizona State Museum.

4. Needs and Priorities

No threats to cultural resources are identified. The biggest problem faced by the program is the disproportionate cost of legal compliance in relation to the size of the project for which compliance is require.

5. Management Goals

To continue to comply with the National Historic Preservation Act and other historic preservation laws.

III. E. Bureau of Reclamation

1. History

The Bureau of Reclamation is a federal agency whose purpose is to develop, manage, and protect water resources in the western United States. Involved in large scale water construction projects including dams, hydroelectric facilities and irrigation systems, the BOR is also subject to federal historic preservation mandates. Arizona is part of the agency's Lower Colorado Regional Office (www.lc.usbr.gov, March 2001). The Bureau established its CRM program in Pima County in the mid 1970s in response to the construction of the Tucson Aqueduct for the Central Arizona Project (CAP). Compliance with the National Historic Preservation Act was required for the project and this law, among others, continues to apply to agency actions today. The original purpose of the program remains the same: compliance with the law for water related projects associated with the CAP. Currently there are two staff persons devoted to CRM in Pima County

2. Authority – Laws

- National Historic Preservation Act of 1966
- Archaeological Resources Protection Act of 1979
- Native American Graves Protection and Repatriation Act of 1990
- Executive Order 11593

Executive Order 11593 signed by President Nixon in 1971, directs the federal agencies to survey their lands, identify cultural resources, and list them on the National Register of Historic Places as part of their overall management responsibilities (King 1998). This has been largely supplanted by Section 110 of the National Historic Preservation Act.

3. Current Practices

Like other agencies, the CRM program is project driven and funded; however, only one to two actions per year require compliance with preservation mandates. These typically involve cultural resources inventory surveys and assessments. The agency has developed internal management guidelines that effects all aspects of the CRM program. In 1983, a cultural resource management plan was developed for CAP lands in Pima County to guide the program in meeting its management responsibilities. The Bureau of Reclamation maintains its own site records but uses the data base maintained by the Arizona State Museum. Despite the regulatory orientation of the program overall, some public outreach and education activities have been conducted.

4. Needs and Priorities

Additional inventory is needed to fully identify the cultural resources on CAP lands. A lack of adequate funding has prevented this and other aspects of program development in the past. Vandalism is identified as the biggest threat to cultural resources and site protection is needed. The

Site Stewards program, organized by the State Historic Preservation Office, is utilized in the state to assist in site protection; however, no site stewards are currently monitoring sites in Pima County.

5. Management Goals

Completing a CAP data base for archaeological sites is identified as a management goal for the future, as is developing a CRM plan for each portion of the CAP.

III. F. Department of Defense, Davis-Monthan Air Force Base (DOD/DMAFB)

The Department of Defense, like other land managing federal agencies, has a legal responsibility to manage cultural resources on bases and other military facilities across the country. The United States Air Force has two installations in Pima County. The Barry M. Goldwater Range (BMGR) in Western Pima County and the Davis--Montan Air Base in Tucson. Both have CRM programs and have been active in inventorying their lands, although Luke Air Force Base, which manages the BMGR, has a longer history of CRM (Ahlstrom 2000). Personnel from Luke Air Force Base were not able to participate in this study; however, the Natural and Cultural Resources Manager for the Davis--Montan Air Force Base did respond.

1. History

The Davis--Montan Air Force Base began its CRM program in 1989 and hired a staff person in 1990 to oversee the management of both natural and cultural resources on base in compliance with federal historic preservation mandates and USAF internal guidelines. The program has not changed from this compliance orientation since its inception.

2. Authority - Laws

- National Historic Preservation Act of 1966
- Archaeological Resources Protection Act of 1979
- Native American Graves Protection and Repatriation Act 1990

The Air Force guides compliance with these mandates through an internal process contained in Air Force Instruction 32-7065, Cultural Resources Management.

3. Current Practices

Only about five CRM projects occur on base in an average year. These typically involve maintenance, new construction, alterations or demolition of buildings that are National Register eligible. Archaeological sites have been identified on base as part of an archaeological survey that was conducted in 1995 during which eight sites were found (Altschul and Lindsay 1992). They are located in areas that are off limits for use. Coordinating historic preservation requirements with project planning is required in Statements of Work for each project; however, the contractors who

do the work on base do not always follow proper procedures, and so in some cases, the work is done before the plans are reviewed for any potential effects to cultural resources. Failure to comply is the top threat to cultural resources identified by the agency contact. Cultural resource management duties are funded per project and like other programs in other agencies there is no separate funding source. There is no proactive CRM program for the base; it is strictly compliance oriented.

4. Needs and Priorities

The staff contact for Davis--Montan Air Force Base identified registering buildings on the National Register of Historic Places as a need and a priority. Many of the cultural resources are buildings and other structures that date to the Cold War era, which is now being considered nationally as a period of historic significance. Registering these buildings on base would give them added protection by giving them a higher profile in the planning process.

5. Management Goals

To ensure that future development on the base is undertaken with proper coordination with all historic preservation laws.

III. G. Arizona State Land Department (ASLD)

1. History

The Arizona State Lands were established in 1912 as part of Arizona's entry into the Union. These lands were given over to the state as a source of revenue for the state school system, among 13 other beneficiaries, and their disposal for this purpose is the primary justification for the Arizona State Land Department (ASLD)(Steve Ross personal communication). As such, resource management of any kind is not the mission of the agency. Nonetheless, in the late 1970s ASLD began managing impacts to cultural resources that occur through permitted ground disturbing activities. The agency looked to the Arizona State Museum for this service and between 1982 and 1985 the Museum carried out surveys on state lands to locate, identify, and evaluate cultural resources as needed. In 1985, ASLD hired its own archaeologist to oversee CRM activities on the state trust lands in compliance with the law and to coordinate consultation with the Museum and the State Historic Preservation Office. Until recently, the Museum reviewed projects that involved state trust land and advised ASLD on whether inventory was needed and how much it would cost. Now the agency makes these determinations on its own. Since the beginning of the CRM program, its purpose has been to ensure compliance with state law and that remains the program objective today. While the State Land Department has participated in and funded archaeological inventories on the state trust lands in the past, and does utilize Site Stewards to monitor archaeological sites, the program is not geared to proactive public outreach kinds of activities. Currently, the program has one staff person who works out of the ASLD office in Phoenix.

2. Authority - Laws

- State Historic Preservation Act 1982
- State Burial Protection Act 1990
- State Antiquities Act of 1927

There are no internal manuals or policies that guide compliance with state law; however, there are agreements with the State Historic Preservation Office and the Arizona Department of Transportation that affect how compliance is achieved.

3. Current Practices

The CRM program is project driven and has no budget other than that used to pay the salary of the one staff member. Typical kinds of actions that require review for compliance with the State Historic Preservation Act include, right-of-way applications (utilities, roads, transmission lines, sewers and water lines, etc.), flood control projects, land sales, and commercial leases. In a given year the State Land Department may receive as many as 600 applications, 300 or more of these will require cultural resources surveys, and in some cases, follow-up testing and data recovery activities are also required.

The review process is initiated when an application to use the state trust lands is received. In the past, the Museum would check its records to determine what is known about the project area and would make recommendations on whether or not a survey was needed. Now the Department itself makes this determination. If a survey is required, the applicant hires a consultant to do the work including any necessary follow up studies. The CRM staff person instructs the applicant and the consultant on what is needed, reviews any reports, and then consults with the State Historic Preservation Office until a clearance is given for the project. In this manner cultural resources are identified, evaluated, and if warranted, subject to a strategy devised to mitigate effects to the resource. In lease situations, the lessee is given the responsibility of consulting with ASLD if the lessee plans to take action that may affect cultural resources. This is the case with the Santa Rita Experimental Range in Pima County, which is leased to the University of Arizona, and the A-7 Ranch, which includes state trust lands under lease to the City of Tucson.

The CRM program maintains its own records and is building a cultural resources data base separate from that established by the Arizona State Museum.

4. Needs and Priorities

One of the biggest problems encountered by the CRM program staff person has to do with coordinating state and federal preservation requirements when federal law applies because of the time this adds to the review process. A second problem relates to there being no funding for compliance; all expenses are passed on to the applicants who often do not believe they should have to pay for this. The biggest threats to the cultural resources themselves are associated with

development and public use of the state trust lands especially in proximity to urban areas.

A number of needs and priorities are identified for the program. More staff is needed; for several years the program had two people until one person left but a replacement is not likely as of this writing. Staff shortages limit what can be done to ensure both compliance with the law and the quality of the work that is done to satisfy the legal requirements. Secondly, more inventory is needed so that a better understanding of the cultural resources on state trust land is possible. This was identified as a particular need for the Santa Rita Experimental Range. Third, a greater use of the state's Site Steward program is needed to ensure protection of high value cultural resource on state trust lands.

5. Management Goals

Management goals identified for the program include:

- Greater monitoring of, and protection for, cultural resources on the state trust lands through site stewards program.
- Develop and implement a para professional program to assist staff with CRM activities on the ground.
- Continue to comply with the law.

III. H. Arizona State Parks (ASP)

1. History

The Arizona State Park system was established in 1957 and has 30 park sites totaling approximately 60,000 acres of state owned land and land leased from the federal and state governments (Arizona State Parks, 2001). The agency started its CRM Program in 1993 with the hiring of an archaeologist on staff. The purpose of establishing the program was to provide an interface between State Parks and the State Historic Preservation Office, which is also a unit of the same state agency. In this capacity, the staff person coordinates CRM activities for all of the parks in Arizona in compliance with state and federal law. This remains the justification for the program today. There is one State Park in Pima County. Catalina State Park was established in 1981.

2. Authority - Laws

- State Antiquities Act of 1927
- State Historic Preservation Act of 1982
- State Burial Protection Act of 1990
- National Historic Preservation Act of 1966

State Parks also has an Agreement with the State Historic Preservation Office that governs how compliance with the State Historic Preservation Act is to be achieved.

3. Current Practices

Approximately 20 actions per year require consultation with the State Historic Preservation Office, and other parties in compliance with legal mandates. These include installing new wallpaper and handrails on historic buildings; excavating septic tanks, ponds, and irrigation systems; replacing doors, floors, roofs, and windows in historic buildings; painting historic buildings; plaster repair; building stabilization; and, archaeological survey or excavation. However, there is no annual budget specifically devoted to CRM. The program is not all compliance driven because of the educational and recreational mission of the state park system. As such, preservation, stabilization, and interpretation are components of the CRM program. The agency has developed internal policies to guide CRM activities. Management plans and draft master plan maps have been developed for each park in the system including Catalina State Park in Pima County. The State Parks agency maintains its own site records and utilizes the archaeological site and survey data base maintained by the Arizona State Museum. The Arizona Department of Transportation also consults with the State Historic Preservation Office on behalf of the State Parks for road projects in the parks.

4. Needs and Priorities

Additional inventory is needed to fully identify the cultural resources in each of the parks. There are over 400 known archaeological sites and 50 historic buildings that require management protection in the park system statewide. At present, the greatest threat to cultural resources is identified as overuse of historic buildings and lack of funds for their maintenance.

5. Management Goals

Three management goals are identified:

- Survey each park for archaeological sites
- Bring historic buildings up to code
- Stabilize historic buildings to enhance protection.

III. I. City of Tucson (COT)

1. History

The City of Tucson has developed a historic preservation program that differs from the CRM programs that were created by the federal and state land managers. In that sense it is more akin to Pima County's program, with the exception that the city's program historically has emphasized the preservation of historic buildings and districts. The city established its program in 1971 with the creation of the Tucson Pima County Historic Commission and with the passage of the Historic District ordinance in 1972. The purpose of both the commission and the ordinance was to protect neighborhoods from destruction associated with urban renewal. The first historic design review began in 1974 with the adoption of Armory Park as a local historic district, followed closely by El

Presidio and Barrio Historico in 1975. The City of Tucson Planning Department has coordinated the design review process since that time.

Over the years, the mission has expanded to include more proactive outreach and education services that go beyond regulatory review of development within locally designated historic districts. At present there are two full time employees devoted to historic preservation and two part time staff. Most recently, the City has committed two million dollars in funding to archaeology and historic research as part of its Rio Nuevo revitalization project.

2. Authority – Laws

- National Historic Preservation Act of 1966
- State Historic Preservation Act 1982
- State Antiquities Act 1927
- State Burial Protection Act 1990
- City of Tucson Resolutions 12243 and 16548

Resolution 12443, adopted in 1983, sets out a process for cultural resource review and assessment for City projects. Resolution 16548, enacted in 1994, adopts Pima County's Comprehensive Plan land use policies and concepts in newly annexed areas; this includes the county's cultural resources requirements..

3. Current Practices

The city typically reviews all city sponsored projects, rezoning actions, and development in the city's five historic districts for compliance with city law. Federally funded projects are also reviewed under federal mandates. Design review typically involves 90 cases a year. Federal environmental clearances average 60 cases annually. Cultural resources clearances on city and federally funded projects, 30 cases; rezoning requests, 50 cases; and, real estate transactions, 45 cases per year. Despite this heavy emphasis on the regulatory and reactive aspect to the city's program, staff also applies for preservation grants, conducts public lectures, and trains members of the Tucson Pima County Historical Commission, Historic Zone Advisory Boards, Realtors and other city staff. The city has a comprehensive plan that includes policies that govern cultural resources issues; however, does not have a cultural resources management plan for the land it owns in the A7 ranch area in the San Pedro Valley.

4. Needs and Priorities

The City has identified the following needs:

- Provide information about historic preservation to the public.
- Work with neighborhoods desiring historic designation.
- Write and administer grants to support preservation projects and activities.

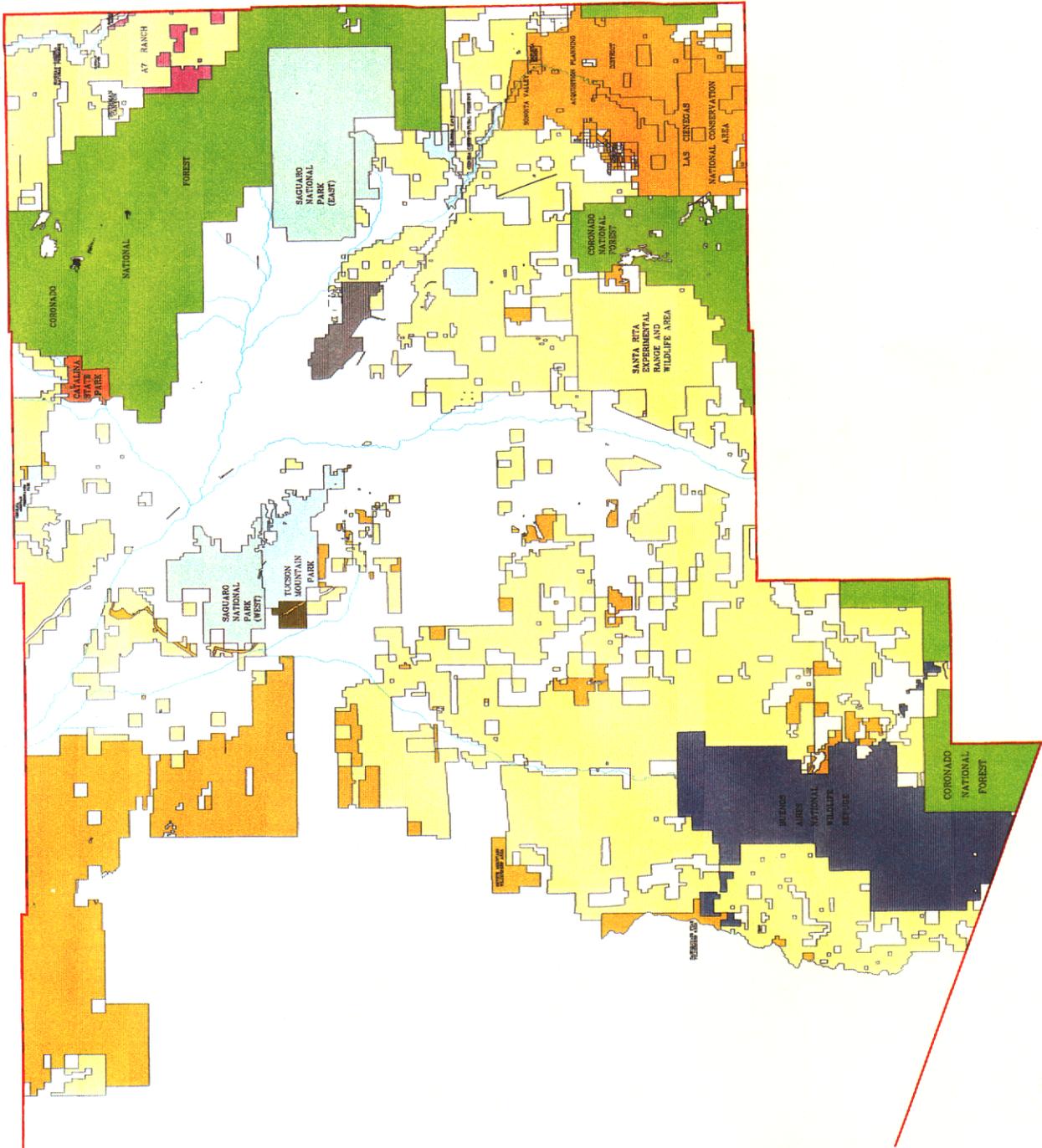
- Develop a website for the office.
- Develop programmatic agreements for federally funded activities.
- Assist in the development of the Rio Nuevo project.
- Oversee compliance with preservation regulations for city projects.

5. Management Goals

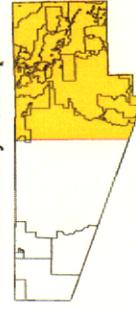
Tucson has a growing preservation program, which serves a diverse public and addresses a range of preservation issues. The goals include more training for city staff and the historic zone advisory boards, better oversight of the city's on-call cultural resources contract, and providing more and better information for the public on cultural resources issues.

Agency Lands for Eastern Pima County

- ASLD
- ASPB
- BLM
- BOR
- COT
- NPS
- PC
- USAF
- USFS
- USFWS
- NOT INCLUDED



Pima County Index Map



Scale Map Scale 1:150,000

The information contained on this map is the result of a review of the records of the County of Pima and the various agencies having jurisdiction over the lands shown. The County of Pima and the various agencies have agreed to publish this map as a public service. The County of Pima and the various agencies do not warrant the accuracy of the information shown on this map. The County of Pima and the various agencies are not responsible for any errors or omissions on this map. The County of Pima and the various agencies are not responsible for any damages or losses resulting from the use of this map. The County of Pima and the various agencies are not responsible for any changes in the information shown on this map. The County of Pima and the various agencies are not responsible for any updates to this map. The County of Pima and the various agencies are not responsible for any other matters related to this map.

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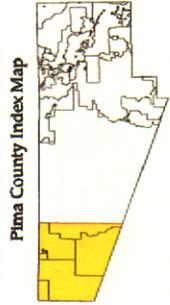
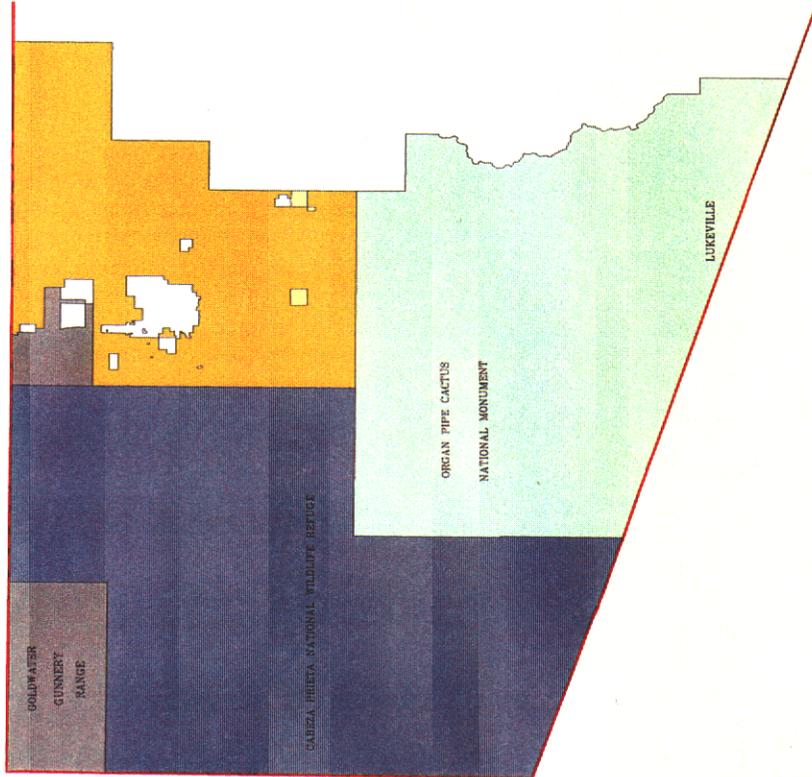


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 http://www.pima.gov/tech



Agency Lands for Western Pima County

- ASLD
- ASPB
- BLM
- BOR
- COT
- NPS
- PC
- USAF
- USFS
- USFWS
- NOT INCLUDED



Index Map Scale 1:1,000,000



Scale 1: 150,000

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IV. Cultural Resource Management in Unincorporated Pima County

This section examines the cultural resources program in Pima County, Arizona, which is the only county government in the state with a mandate to preserve the record of the past. Discussed below are the program's history, legal authorities and current practices in one subsection. Its needs and priorities and future management goals are presented in two separate subsections to provide for greater elaboration than used in Section III. Program changes are justified and detailed recommendations are presented.

IV. A. Pima County's CRM Program

1. History

The cultural resources program office provides management, technical and administrative services to all County departments to ensure compliance with federal, state, and county historic preservation laws and policies. Pima County committed to the concept of historic preservation in 1972 with the creation of the Tucson Pima County Historical Commission, a joint city/county advisory board, and with by adopting its Historic Zone Code in the same year. In 1983 Pima County adopted Board Resolution 1983-104 directing the county to consider the effects of its own public works projects on archaeological and historical resources. In 1985, these same requirements were extended to private developers through the county's zoning and grading requirements (Mayro 1998). Staff was hired for the purpose of running a cultural resources program in 1989 and again in 1998. A third staff expansion occurred in early 2001 when two more staff members were hired to meet the increasing work load of the program.

2. Authority – Laws

Pima County does the job of historic preservation under the authority of a number of historic preservation laws, regulations, and policies on the federal, state, and local level as listed below.

- National Historic Preservation Act of 1966
- Arizona Burial Protection Act of 1990 (public lands)
- Arizona Burial Protection Act of 1990 (private lands)
- State Historic Preservation Act of 1982
- State Historic Property Tax of 1977
- Pima County Code 18.63 - Historic Zone Overlay
- Pima County Code 18.81 - Grading ordinance: Cultural Resources Assessment/Mitigation
- Pima County Code 18.91 - Rezoning Procedures
- Pima County Resolution 1983-104 - Cultural Resources Protections Policy

A previously discussed, Section 106 of the National Historic Preservation Act requires that federal actions involving federal lands, funding, or authorization, take into account the effect of those actions on cultural resources listed in or eligible for listing in the National Register of Historic Places

following procedures set out in regulation. Often, Pima County must meet the requirements of the law, either because the requirements are passed on to the county by a federal agency, or because a county project becomes federalized at some point and county staff must coordinate with the federal agency to ensure that the requirements of the National Historic Preservation Act are met.

The State Historic Preservation Act functions in a similar way to the NHPA and applies to state agencies involving state lands and or properties. The two sections of the Arizona Burial Protection Act protect unmarked human graves from unauthorized disturbance on private land and state land (including county lands). County projects must abide by this state law. The State's Historic Property Tax law provides incentives for the owners of properties listed on the State Register of Historic Places to maintain their historic character.

The county's Historic Zone enables the zoning authority of the county to be used for the purposes of protecting historic properties from development actions within designated historic districts. Only two districts have ever been so designated. The grading ordinance requires that developers who are required to receive a Type 2 grading permit, such as subdivisions, must also comply with Pima County's cultural resources requirements. The county rezoning procedures require that lands that are being rezoned for development must comply with the county's cultural resources requirements as a condition of the rezoning approval. County Resolution 1983-104 establishes Pima County's commitment to protect archaeological and historic sites from damage due to its own public works projects.

These policies, laws, and regulations require that Pima County take steps to protect cultural resources from the effects of its own actions under federal, state, and local law, and requires that development of private land follow the same requirements when county approval of certain kinds of development is required. As required by both law and as a matter of practice, this often involves consultation with state and federal agencies, Indian Tribes, other local governments, Pima County staff in a variety of departments, private developers, attorneys, architects, contractors, and the public.

3. Current Practices

Pima County's cultural resources program office reviews all county capital improvement projects and all private sector land use plans, development plans, and subdivision plans to ensure that all archaeological and historical sites have been identified and evaluated, that appropriate federal and state agencies has been consulted, and that mitigation measures have been implemented with agency and county approval prior to construction. In an average year, Pima County cultural resources personnel review and act upon approximately 200 development plans, subdivision plans, and grading permits; 25 petitions for land rezonings; 40 department of transportation road projects; 10 projects from Parks and Recreation; half a dozen projects each from Real Property and Facilities Management; 24 projects from Pima County Flood Control; and, 12 from the Waste Water Division for a total of approximately 320 projects per year. In many instance each project requires multiple consultations averaging three per project, but in some cases, dozens of consultation are required, especially for projects that are on going for years at a time such as road construction.

Significant time and resources have also been committed to the historic preservation Bond Program approved by the voters in 1997 for 11 historic preservation bond projects totaling 6.5 million dollars, and the development of the Cultural Resources and Ranch Conservation elements of the Sonoran Desert Conservation Plan, a four year regional planning effort that the county is currently engaged in. The office also works to conserve cultural resources in county natural preserves through inventory and monitoring, and works with the Arizona Site Stewards to ensure protection. Other program areas include the application for, and administration of, federal and state grants to assist in the rehabilitation and adaptive use of county historic properties, and the development of public information projects, exhibits, and brochures concerning the protection of cultural resources.

IV. B. Needs and Priorities

1. Inventory of County Lands

One of the most important tasks before the county is to conduct a cultural resources inventory of the county lands. It is not possible to properly manage something if you don't have a good idea of what it is, where it is located, and its present condition. The county has under its administrative control approximately 31,757 acres in four main units: The Tortolita Mountains Preservation Park, the Tortolita Mountain Park, Colossal Cave Park, and the Cienega Creek Natural Preserve, with additional acreage in the Agua Caliente, Arthur Pack, and Southeast Regional Parks. Of the main park areas, only Colossal Cave and the Cienega Creek Natural Preserve have seen a concerted effort at cultural resources inventory. Pima County arranged to have a large portion of Colossal Cave Park surveyed as part of its effort to take over the management of the park from the Arizona State Parks agency. The Cienega Creek Natural Preserve, however, has been inventoried almost entirely by private research efforts. Neither has a management plan for the preservation of cultural resources.

The County has only partial information on the cultural resources it has under its control thereby limiting what can be done to protect them for the future. This needs to be rectified through a program of site recording conducted by specialists in history, ethnography, and archaeology. The results will build baseline data that can be used to enable preservation planning for county sponsored improvements, such as recreational facilities, but also provide the opportunity for resource oriented public education and outreach through site interpretation.

The following actions are recommended:

- Conduct a full cultural resources inventory of all county lands.
- Prepare management plans for the county's cultural resources assets.

2. Evaluation, Registration, and Treatment of County Cultural Resources

An important part of the management process relates to an assessment of resource significance. Not all cultural resources are significant for a variety of reasons. Some may be so limited in extent that

information about the past is negligible. Others have been damaged by natural or man made agencies and no longer retain their original form, in the case of buildings, or can no longer provide relevant information about the past, in the case of archaeological sites. Following the criteria defined by the National Park Service, an evaluation of importance is both possible and necessary in order to distinguish those cultural resources that are deserving of management attention from those that are not. These criteria are normally applied as cultural resources are described through inventory and usually involve consultation with the Arizona State Historic Preservation Office in Phoenix.

Both the State and Federal Governments have registers that allow for evaluation, as well as a formal process for listing cultural resources. Registration provides an official recognition that a cultural resource has met the criteria of eligibility and identifies the reasons why it is considered important. The State Register of Historic Places is similar to the National Register of Historic Places and both use the same criteria (see 36 CFR 60.4 National Register of Historic Places). Cultural resources can be listed on either register if one or more of the following criteria apply:

- a) they are associated with events that have made a significant contribution to the broad pattern of history; or
- b) they are associated with the lives of persons significant in our past; or
- c) they embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) they have yielded, or may be likely to yield, information important in prehistory or history.

Other criteria conditions apply as well, for instance, a cultural resource normally must be 50 years old or older to be considered eligible for listing. Generally, when a cultural resource is listed to the federal register it is also placed on the state register but the reverse is not always true. There are currently 96 properties and districts listed on the National Register of Historic Places in Pima County, most of which are within the City of Tucson. Many more, however, could be listed on the state and federal registers because they would meet the criteria of eligibility if formal nominations were prepared. It is appropriate, however, for Pima County to develop its own register of historic places using the National Register criteria modified to meet its own needs. Such a register would allow for local recognition of places determined by the citizens of the county to be important and could be used to formally designate cultural resources on both private property and county lands.

A complete inventory of county lands would identify all cultural resources and enable evaluation and where warranted, registration to the appropriate register(s). This information would also provide the county the opportunity to develop management plans for conservation purposes and to anticipate and treat future impacts required under county policy. Treatment means any course of action that leads to the preservation of the resource or the preservation of the information about the past that the resource can convey. As a matter of both policy and practice, Pima County requires a treatment plan for actions the county takes that have the potential to adversely effect a cultural resource that is listed on the state or federal registers or that may be eligible for such listing. This can take the form of a plan to avoid the resource and preserve it in place with safeguards against future impacts, or it can

involve a plan to renovate a historic building thereby preserving it for future use, or it can require that the information content of an archaeological site be recovered through excavation as part of a data recovery plan.

Preservation in place is always the preferred form of treatment and this is often the quickest, cheapest and most effective means of achieving preservation. While recording a cultural resource captures valuable information about the past, archaeological excavation for instance, is a destruction process and once the site is excavated it is gone. In some cases, preservation in place is not possible or desirable, and thus mitigation of effect through some kind of treatment is necessary. Treatment is almost always a response to a proposed action that threatens a registered or register eligible cultural resource. Full inventory of the county lands would enable the county to do both proactive long range planning and reactive project specific planning.

The following actions are recommended:

- Evaluate known cultural resources on county lands and list them on the State Register of Historic Places and the National Register of Historic Places where warranted.
- Create a Pima County Register of Historic Places using a modified form of the National Register criteria.
- Assist Private land owners in registering their properties to County, State and National Registers as appropriate.
- Develop legal mechanisms for cultural resources conservation on private lands that can be used to ensure preservation in place as a viable treatment option.

3. Site Monitoring and Law Enforcement

Arizona is one of the few states in the nation that has an organization that is devoted to monitoring the condition of selected archaeological sites as an adjunct to site monitoring by law enforcement personnel. Started in the 1980s as a joint program between the state government and federal land managers, the Arizona Site Steward program puts trained volunteers on the ground to periodically visit scores of high value archaeological sites located on public lands (Hoffman 1991). The purpose of these visits is to deter looting - the removal of artifacts from their archaeological contexts in a unscientific manner - an activity that causes irreversible damage to archaeological sites. Studies have shown that looting almost always occurs in remote locations that are accessible by car, but receive little traffic, where enforcement is perceived to be nonexistent (Ahlstrom et al. 1992; Nickens et al. 1981). Thus, the site stewards bring a measure of exposure to archaeological sites and this has the effect of deterring looters from visiting the sites being monitored. The Site Stewards program is organized through the State Historic Preservation Office and for 2001 has a total of 750 volunteers monitoring sites all across the state, including in Pima County (personal communication, Mary Estes, Arizona State Historic Preservation Office). The volunteers must pass through a

training and certification program that instructs them in site monitoring and reporting procedures. Pima County could greatly benefit by expanding its involvement with Arizona Site Steward program. There are sites on county land that may be threatened by potential looting activity that could be saved by citizens who live in Pima County who are willing and able to commit to their protection.

As mentioned, the Site Stewards program was developed to curb looting, but this need arose because traditional means of patrolling the public lands by law enforcement agencies were unable to provide the coverage that was needed. Law enforcement personnel are typically stretched thin as it is such that monitoring archaeological sites and other kinds of cultural resources is difficult given the other responsibilities that the agencies also have to meet. Nonetheless, site stewards cannot replace law enforcement, because only the latter has the authority to make arrests and to turn these cases over to the courts for prosecution. The State Antiquities Act applies on all county lands. The act states that it is unlawful to knowingly and intentionally disturb an archaeological site without permission from the Arizona State Museum. Enforcement of the law is needed to convey the county's position that damaging cultural resources on county lands will not be tolerated. Pima County could make a policy statement to this end in the form of a Board Resolution and to direct the county sheriff's department to act in cooperation with state agency officials to enforce the Antiquities Act on county lands.

The following actions are recommended:

- Develop a Pima County site stewards program by linking concerned citizens in Pima County with the existing statewide program so that high value archaeological sites can be monitored and protected.
- Prepare a policy statement for the Pima County Board of Supervisors resolving that unauthorized disturbance to cultural resources on county land is prohibited in accordance with state law.

4. Adaptive Reuse and Rehabilitation

Another need in Pima County is to adaptively reuse and rehabilitate older historic buildings owned by the county for continued public use. The advantages of doing so are that the objective of historic preservation is met by saving pieces of the past while at the same time making them useful for the future. An excellent example of county efforts to this end is the Robles Ranch in Three Points. Formerly the headquarters of the Robles Ranch Cattle operation established by Bernabe Robles in the early 1880s. At one point this ranch covered approximately one million acres stretching from Florence to the Mexican border. Pima County has purchased the ranch house and is in the process of adaptively remodeling the building to be used as a community center. This preserves the building as a symbol of the frontier while turning it into a useful space that will meet the needs of the people living in the area. There are other buildings on county land that can and should be preserved in this manner. It is important to note that adaptive reuse and rehabilitation is often a complex undertaking involving the collective efforts of private citizens, architects and engineers, as well as state, local, and federal agency personnel; in many cases this requires a combination of public tax dollars, grant

money, and even private donations. While not a simple exercise, the result can bring a community together in ways that fosters a sense of place that might not otherwise be possible.

The following actions are recommended:

- Identify county properties that would benefit from adaptive reuse and rehabilitation so that symbols of the past can continue to serve present needs and future aspirations.
- Seek funding sources through state and federal historic preservation programs or through county bonding initiatives should the opportunity arise.

5. Ordinances and Legal Tools

Managing cultural resources occurs within a legal and regulatory environment. This is due in large part to the linkage between the cultural resources and property, both public and private, which are subject to a wide variety of federal, state, and local laws. It is necessary to ensure that Pima County's cultural resource management goals are achievable by developing the necessary legal tools.

To this end, it is recommended that Pima County clarify its existing regulations under the County Code. Under Chapter 18.81 specifically, the grading standards require that all private development projects subject to a Development Plan or a Subdivision Plat must get a Type 2 Grading Permit. To receive a Type 2 grading permit, a private land owner or developing must comply with the county's cultural resources requirements as a condition of permitting. Under Chapter 18.91, rezonings are subject to the same requirements whenever a Site Analysis must be prepared and these must be met before construction begins. In addition, Pima County attaches cultural resources requirements to Specific Plan review approvals and has developed Standards and Special Requirements for Archaeological Sites and Historic Resources that apply to all private development actions. County Public Works projects are also covered under Board Resolution 1983-104. This subjects the county to the same set of requirements that the private sector must meet for its own public works projects.

A single cultural resources protection ordinance that brings together the county's policies and regulations in one place will help to clarify these requirements and enhance public access and awareness. At the same time, changes should be made to strengthen the existing regulations. For example, compliance with the cultural resources regulations needs to be included in the bond assurances that a developer must give to the county when planning for a subdivision development. These costs can be considerable and should be covered in the assurances to ensure that the requirements are met before the county gives final project approval.

Secondly, it is recommended that the county revise its Historic Zone ordinance contained under Chapter 18.63 of the County Code. This ordinance was developed in the early 1970s to provide the citizens of Pima County with the voluntary means of creating overlay zones for the purpose of protecting historic areas called districts. Unfortunately, this provision of the County Code has only been used twice and both districts have now been annexed by the City of Tucson. Changes to this ordinance are needed to turn it into a viable tool for historic preservation and cultural resources

management.

The following actions are recommended:

- Clarify and strengthen existing county law that requires cultural resources be considered for planning in county public works (Board Resolution 1983-104) and private development projects (Chapters 18.81 and 18.91 Pima County Code).
- Revise the Chapter 18.63 of the County Code (Historic Zone) to make it useful for preservation purposes.

6 Regional Modeling and Other Studies

Management of cultural resources can only be effective if there is sufficient knowledge and understanding about them to make management decision. Research is needed to fully characterize the nature and extent of cultural resources in Pima County. Several studies have already been identified as needed to fill in gaps in the county's baseline information on cultural resources (Pima County 2000).

It is recommend that an inventory of traditional cultural places (TCPs) be performed within eastern Pima County in particular. TCPs are places that are integral to the identity of living communities because of their association with beliefs that are rooted in that community's history and are important to maintaining its cultural identity (National Park Service, 1990). Many of these places are important to Native Americans, often as sacred sites, but not exclusively. El Tiradito in Tucson is an example of a TCP that is important to the Mexican-American community. The challenge from a management perspective is that so few are known. There is good ethnographic evidence to suggest that the Tohono O'odham, Yaqui, Apache, Hopi and Zuni tribes among other traditional communities all have or could identify TCPs within portions of Pima County. Knowing where these places are and why they are important would enable county staff to incorporate these places into land use planning and provide for their protection where possible. Gaining this information often requires direct interview with knowledgeable sources within the community and this is made more difficult by a natural reluctance to discuss issues of sacredness with outsiders. Making the attempt, however, is necessary and would best be accomplished through a program of contacts and follow up interviews with knowledgeable leaders in traditional communities.

A second study that is needed pertains to the architectural history of Pima County. Pima County has ten communities within it that are 50 years old or older, and some date back to the 19th century. While a number of buildings in the county are listed on the National Register, no systematic attempt has ever been made to assess these communities for their historic building and engineering features. The same is true for the rural country side and many historic homesteads and ranches are largely undocumented. It is certain that this kind of assessment would identify places that could be preserved for the future, through a variety of preservation programs, if the land owners were willing to allow recording. Without such an assessment, the places that are historic will degrade in time

limiting their value for future generations.

A third study is recommended to identify land owners in certain parts of the county where archaeological site data is particularly lacking and to work with these citizens to conduct reconnaissance surveys of places that they know or suspect might contain archaeological sites. It is often the case that land owners know of sites on their property that are unknown to the expert community and working with these people could help acquire information that is currently lacking. Again, like the historic building and engineering feature study proposed above, this should be strictly voluntary, relying upon people with an interest in the subject. The result, however, could significantly contribute to the county's knowledge of the archaeological record especially in places that have not received formal study in the past.

Since only 12.1% of eastern Pima County has ever been formally investigated, there is much more about the county and its cultural and historical resources that remains to be discovered (Pima County 2000). This presents a real problem for cultural resources management because the total universe of resources is unknown. The vast majority of cultural resources within the county are archaeological in nature. Approximately 4300 sites are known in eastern Pima County as of this writing meaning that many thousands of sites probably exist but have never been recorded. To overcome this deficiency, it is recommended that an archaeological site probability model be developed using the county's Geographic Information Systems database to predict where archaeological sites are most likely to be found. This tool would enable both long term proactive management planning but also would be an invaluable means of flagging areas of high site sensitivity for developers. Modeling would consist of evaluating existing archaeological site data against environmental data in order to identify patterning in site locations, then these locations would need to be field checked to test the efficacy of the model. Additional survey information would be needed for areas that are not well recorded. It may be that the reconnaissance study of ranch lands outlined above could be combined with building and testing the archaeological model.

Pima County has a wealth of cultural and historical resources as evidenced by the recent study entitled, "Saving the Past for the Future" (Pima County 2000). What is also true is that not enough is known about those resources to do justice to them and more effort is required to manage what is known.

The following actions are recommended

- Conduct additional studies as discussed to further characterize cultural resources in Pima County so that they can be incorporated into both long term planning and short term development review.

IV. C. Future Management Goals

Management goals are an outgrowth of recognized needs and priorities. The following discussion identifies a number of broad goals and suggests steps for achieving them.

1. Conservation

The primary cultural resources management goal for Pima County should be conservation - the physical and legal protection of the resource from future threat of disturbance. This can involve a variety of possible conservation mechanisms including, but not limited to, public purchase of lands containing cultural resources; easements, covenants, and other restrictions that prohibit disturbance to lands that contain these resources; donations of lands containing cultural resources to organizations whose mission includes historic preservation; and, purchase of development rights from private land owners who are compensated for giving up certain land uses for preservation purposes. These forms of protection are the most effective in preserving the record of the past for the future because they are often proactive occurring before such time as a threat is immanent. The county is currently working to identify a list of priority cultural resources that have extraordinary value to the history and culture of the citizens for conservation. Once the list is prepared, the county should seek their conservation using these and other measures.

The following actions are recommended:

- Complete the listing of priority cultural resources and update it periodically.
- Integrate priority cultural resources into planning efforts and make their conservation a priority.
- Work with landowners to conserve property that contains priority cultural resources.
- List priority cultural resources on local, state, and national registers as appropriate.
- Assist the owners of registered priority cultural resources in finding financial incentives for their maintenance and protection.

2. Preservation

Pima County must also enhance its ability to preserve cultural resources from threat due to public works and private development. This stands in contrast to conservation, which is the physical protection of cultural resources. Preservation in this context means being able to manage the effects of development on cultural resources so as to minimize harm. Legal tools are needed to strengthen the county's ability to require that actions that have the potential to adversely effect cultural resources comply with a set of standards designed to treat these effects. Currently, Pima County is able to control some threats to cultural resources under some circumstances. For instance, activities requiring Type 2 grading permits are covered by the county's cultural resources requirements, but

activities that require a Type I grading permit are not (Pima County Code Chapter 18.81).

It is also true that other local governments vary considerably in their efforts to consider cultural resources in their land use and development approval processes. These range from systematic review of plats and plans for potential effects to cultural resources under certain circumstances (City of Tucson) to nothing at all under most circumstance (Sahuarita). Pima County can, and should, work with the other local governments in the county to find ways to narrow the gaps that exist in protections afforded cultural resources through local law and regulations.

The following actions are recommended:

- Make the changes to county law recommended in IV.B.
- Conduct an analysis of existing procedural requirements in the County Code to identify gaps in protection afforded cultural resources.
- Draft administrative and legislative remedies for procedural gaps.
- Provide technical assistance to other local governments in protecting cultural resources under their administrative control

3. Outreach and Education

A public that does not understand or appreciate the record of the past is unlikely to support legal and financial efforts to protect that record. This is particularly true in times when budgets are tight and government intrusion in the lives of the citizens must be fully justified. However, when the public believes that saving an honored past for the future enhances the quality of life, then support for cultural resources conservation and preservation is high. The citizens of Tucson and Pima County have demonstrated this commitment to their history and culture, but more information is needed to inform them about what Pima County has achieved and what still remains to be done. Outreach and education requires a proactive effort to involve the public in historic preservation; to make the public a partner in this activity. Most historic preservation programs fail to make this a priority, but it is critically important if public support for the protection and management of cultural resources in Pima County is to be maintained.

The following actions are recommended:

- Create an interactive page on the county web site that informs the public about the history and culture of Pima County and explains the purpose of the county's historic preservation and cultural resources management program.
- Develop brochures to inform the public about the county's cultural resources program.
- Revise the existing brochure on the county's cultural resources requirements as needed and

distribute.

- Research and publish articles on popular subjects in Pima County history and archaeology and link to preservation.
- Conduct public lectures on the county's cultural resources program emphasizing the value of preservation.
- Conduct educational tours of cultural resources on county lands for the public.
- Participate in the State Archaeology Fair and other county and statewide educational venues.

4. Tourism and Recreation

One of the ways that the public can benefit from the protection of cultural resources is through on site visits and interactions with the resources in their original settings. Visiting an interpreted archaeological site as part of a trail hike or touring a historic building that has been renovated for that purpose provides an opportunity for education that can be both informative and entertaining. Sites designed for public visitation and interpretation can also promote tourism and the economic benefits that come with it. Heritage tourism, as it is called, has become a significant and growing sector of the state's economy and is critical to its economic future (State Historic Preservation Office, 2001). Millions of dollars of revenue are at stake. Pima County can and should become a part of this phenomenon by investing energy and resources into identifying suitable cultural resources and developing and promoting them for public visitation.

The following actions are Recommended:

- Identify cultural resources on county lands suitable for public interpretation.
- Plan for and develop these for passive interpretation in conjunction with recreation.
- List these with local and statewide tourism organizations.
- Promote tourism and recreation of cultural resources that are already developed for public visitation on county lands and assist other agencies in the same for resources located on their lands.

5. Research

Knowing the nature and extent of its cultural resource assets and understanding their importance will enable the county to choose the best means of protecting them for the future. Research is essential to proper management so that informed decisions can be made about which resources are deserving of protection and why, as well as, how best to use limited resources to meet the public interest in preservation. Since our understanding of cultural resources changes as our knowledge and

understanding grows, research must be an ongoing process that serves both educational and management goals.

The following actions are recommended:

- Prepare regional research themes and contextual studies in history and prehistory to be used in preparing statements of significance. Partner with state and federal agencies for this purpose.
- Seek out and secure grant funding for the studies recommended in IV.B.6 above.
- Work with the University of Arizona, Department of Anthropology; the Arizona State Museum; and the Arizona Historical Society to encourage academic research in history, ethnography and archaeology be conducted in Pima County.

6. Training

To ensure that management goals are attainable, staff must be properly trained in the skills and abilities needed to effectively manage cultural resources. This is true of all the cultural resource management programs discussed here and applies to Pima County's cultural resources program staff as well. This requires a further commitment on the part of the county to support professional development and training activities. In turn, these staff must train other county employees who need to know about the county's cultural resources requirements that effect the jobs that they do. Engineers, planners, park personnel, facilities managers, and law enforcement are only some of the county staff who would benefit from a regular program of cultural resources training.

The following actions are recommended:

- Train cultural resources staff in historic preservation law and planning, as well as, CRM techniques and procedures as needed.
- Prepare a training program for county staff on the county's cultural resources requirements and procedures.
- Continue to encourage and support professional development through participation in conferences and meeting especially when staff is giving a presentation on a topic related to historic preservation or cultural resource management.

V. The State of Cultural Resources Management in Pima County

This section summarizes the data on known cultural resources by agency, estimates the relative sensitivity of public lands for archaeological sites, presents a comparative analysis of the CRM programs in Pima County and ends with an evaluation of cultural resources protection for both public and private land in Pima County.

V. A. Comparative Resource Summary by Agency

Tables V.A.1 and V.A.2 below present summary information on the number of cultural resource surveys, acres of surveyed land, the corresponding percent of surveyed land, the number of archaeological sites, the number and kind of historic resources, and the number of traditional cultural places that are known for each agency in both eastern and western Pima County. Figures enclosed in parentheses under the "# of Sites" column are an estimate of the number of archaeological sites per acre determined by dividing the number of acres surveyed per agency by the number of sites found. The * symbol indicates that data from a source other than the Arizona State Museum AZSITE database was used to correct the totals.

| Agency | Size (acres) | # of Surveys | Acres surveyed | % Acres surveyed | # of Sites | # of HRs | # of TCPs | Total |
|-------------------|--------------|--------------|----------------|------------------|-------------------|------------|-----------|-------|
| BLM | 307,850.3 | 87 | 5,775 | 1.8 | 453 (1/12.7) | 3nr 2gt | 2 | 460 |
| NPS | 91,987.2 | 28 | 27,121.6 | 29.4 | 322 (1/84.2) | 2nr | | 324 |
| USFS | 331,355.1 | 158 | 21,093.6 | 6.3 | 372 (1/56.7) | 4nr 2gt | | 378 |
| USFWS | 118,996 | 7 | 748.3 | 0.6 | 12 (1/62.3) | | | 12 |
| BOR | 2,478.2 | 5 | 169.2 | 6.8 | 0 | | | 0 |
| DOD/ DMAFB | 10,740.1 | 12 | 4,870.9 | 45.3 | 8* (1/608.8) | | | 8 |
| ASP/CSP | 5,488.5 | 27 | 3,897.1 | 71.0 | 103 (1/37.8) | 1nr | | 1031 |
| ASLD | 751,538.9 | 418 | 73,314.8 | 9.7 | 1030 (1/71.1) | 4nr | | 107 |
| City of Tucson | 6,765.8 | 4 | 51.8 | 0.7 | 1 (1/51.8) | | 1 | 2 |
| Pima County | 31,758.4 | 42 | 7,536 | 23.7 | 121 (1/62.2) | 2nr | | 123 |
| Total | 1,658,958 | 788 | 144,578.3 | 8.7 | 2,422 (1/59.8) | 20 | 3 | 2,445 |

It is clear from these data that more effort has been made in searching for and finding cultural resources in eastern Pima County than in western Pima County. This makes sense given that eastern Pima County has experienced the greatest population growth, and as such, uses of the public lands and the resources they contain are greater there than in western Pima County. Still there is wide variation among the CRM programs in eastern Pima County both in the numbers and kinds of resources recorded and how much effort has been made to find them. Looking at the columns of data on the number of surveys, acres surveyed, and percentage of surveyed land provides some insights into differences in management strategies among the agencies.

The number of surveys per agency is either a reflection of the level of land use that requires survey in compliance with the law, or the level of investment that is made proactively to locate cultural resources for management purposes, or both. For instance, ASLD requires that the user of the Trust lands comply with the requirements of the State Historic Preservation Act, so the high number of surveys on ASLD land indicates that they have been used to a very high degree for actions that require survey. The 418 surveys conducted on the Trust lands have resulted in 73,314 acres of land being surveyed, the highest acreage count of any agency, and yet because the size of the ASLD land is so great, only 9.7 percent of the agency's holding have ever been investigated. It is worth noting that these figures would be considerably lower if not for a research project conducted by the Arizona State Museum in the early 1980s that involved surveying large tracts of state trust lands (Fish, Fish and Madsen 1992). The USFWS is also a compliance oriented agency that abides by federal historic preservation mandates. The seven surveys on its lands totaling 748 acres shows just how little the land is used for activities that require survey, and this is reflected in the extremely low percentage of agency lands that have ever been investigated.

On the other hand, at 28 surveys the NPS has one of the lower survey counts of the agencies in this study, and yet 27,121 acres or almost 30 percent of its lands have been inventoried. The NPS has worked over many years to proactively inventory its lands for the purposes of managing its cultural resources. This is consistent with the agency's resource protection, recreation, and education orientation. Similarly, the Arizona State Parks agency has inventoried a high percentage of the Catalina State Park for cultural resources through a limited number of surveys. Part of this effort involved nominating the Sutherland Wash Archaeological District to the National Register of Historic Places. The DOD is another agency that has surveyed at least some of its lands in the absence of specific undertakings. In this case, 12 surveys were conducted on Davis--Montan Air Force Base to inventory cultural resources on 4,870 acres covering about 45 percent of the base. The Department of Defense, of course, has a very different kind of mission than either the National Park Service or Arizona State Parks. Still Base planners decided to conduct large scale cultural resource inventories to more fully characterize their management responsibilities and to allow advance planning for agency activities.

The BLM and the USFS are examples of agencies that have conducted both proactive cultural resources surveys for management purposes and surveys that are project driven compliance actions sponsored by either the agency or private users of the public lands. The Forest Service has higher counts in numbers of surveys, acres surveyed, and percentage of lands surveyed than the Bureau of

Land Management, which may be a product of different kinds and levels of land use. Nonetheless, both the BLM and the USFS are multiple use agencies meaning that their missions are to enable different, and sometimes competing, land uses including conservation and resource extraction. These mission orientations produce the need for both proactive and reactive cultural resource management strategies.

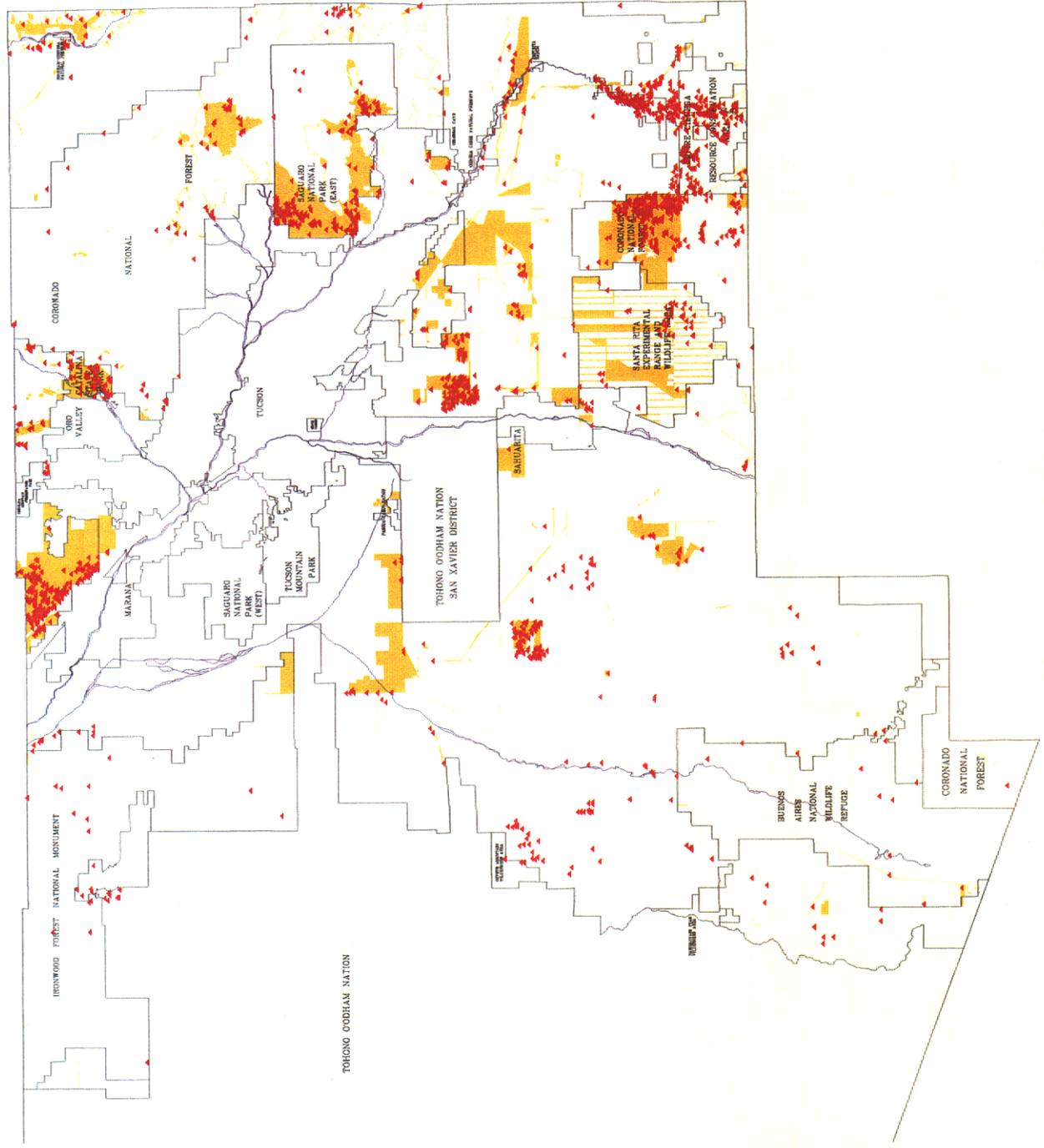
The total survey counts and acreage figures for public lands in eastern Pima County show that 788 surveys have been conducted covering 144,578.3 acres or approximately 8.7 percent of all the public lands. What this means is that 91.7 percent of the public lands in eastern Pima County have not been formally investigated. The maps, entitled "Archaeological Sites and Surveys for Public Lands Eastern Pima County" and "Archaeological Sites and Surveys for Public Lands Western Pima County" graphically show the extent of public lands that have been surveyed for cultural resources and the location of known archaeological sites. These images dramatically illustrate the limited and uneven nature of the survey coverage, but also demonstrate how archaeological sites tend to cluster on the landscape. When survey and site data on private lands are added, then it becomes apparent that proximity to the regions drainages and springs accounts for most of this phenomenon (Pima County 2000)

Counts of archaeological sites in eastern Pima County as indicated in Table V.A.1 also vary as a function of both how much survey has been conducted and where. Research indicates that the majority of archaeological sites in Pima County are prehistoric in age and can largely be attributed to the Hohokam people, who occupied southern and central Arizona from approximately AD 700 to AD 1450 (Pima County 2000). Of the 2,645 archaeological sites that could be identified as to time period, approximately 71 percent were ceramic period sites, principally Hohokam. Only 9.7 percent of the sites were earlier Archaic and Paleoindian sites, and 5.9 percent of the sites were identified as belong to the Historic period (ibid. page. 128, Table V.1.2). Many of the archaeological sites that are known have been recorded in close proximity to the major drainages in the regions. These areas tend to be dominated by private not public lands. Nonetheless, it is reasonable to expect that the archaeological record on public lands will also be dominated sites that are Hohokam in origin, with earlier Archaic and later Historic period sites in lower numbers.

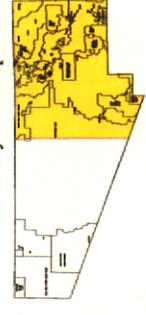
The Arizona State Land Department has the highest number of archaeological sites of all agencies. Again, this is due in part to the results of a large scale survey of state and private lands conducted by the Arizona State Museum, which recorded the Marana Mound community, a Hohokam settlement consisting of hundreds of archaeological sites (Fish, Fish and Madsen 1992). The prehistoric community is indicated as a large clustering of archaeological sites north of the Santa Cruz River in Marana on the site and survey map of eastern Pima County. The BLM, NPS, USFS, ASP/Catalina State Park, and Pima County all have one hundred or more archaeological sites recorded on their respective lands, whereas, the USFWS, City of Tucson, and BOR have only a few or none; this is a result of the low survey coverage of the lands managed by these agencies. These sites are evident as site clusters in the Catalina State Park, Saguaro National Park East, on Bureau of Land Management land along the Cienega Creek, and US Forest Service lands to the west of Cienega Creek. The one exception is the DOD/Davis--Montan Air Force Base, which has one of

Archaeological Sites and Surveys for Public Lands Eastern Pima County

-  Archaeological Sites
-  Archaeological Surveys



Pima County Index Map



Index Map Scale 1:1,000,000

The information presented on this map is the result of the fieldwork conducted by the staff of the Pima County Technical Services, Inc. (PCTS) in cooperation with the Pima County Office of Cultural Resources. The data was collected from 1998 to 2000. The information presented on this map is for informational purposes only and should not be used for any other purpose. The Pima County Office of Cultural Resources is not responsible for any errors or omissions on this map. The information presented on this map is the property of PCTS and is confidential. The information presented on this map is the property of PCTS and is confidential. The information presented on this map is the property of PCTS and is confidential.

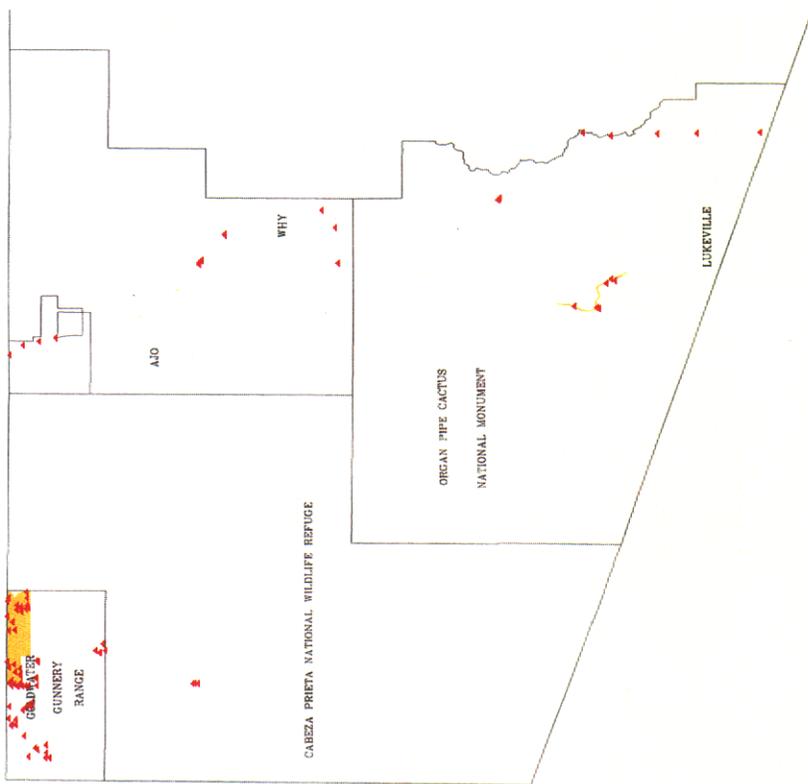
Scale 1: 160,000



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Archaeological Sites and Surveys for Public Lands Western Pima County

-  Archaeological Sites
-  Archaeological Surveys



Pima County Index Map



Index Map Scale 1:100,000

The information presented on this plan is the result of a field survey conducted by the Pima County Technical Services staff. The information is intended for informational purposes only and is not intended to be used for any other purpose. The Pima County Technical Services staff is not responsible for any errors or omissions in this plan. The information is provided as a service to the public and is not intended to be used for any other purpose. The Pima County Technical Services staff is not responsible for any errors or omissions in this plan.

Scale 1: 100,000



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WWW.PIMA-COUNTY.ORG

the highest percentages of acres surveyed but one of the lowest number of sites recorded. The Arizona State Museum data showed one site on the base but the actual site total is eight sites as reported through personal communication with Gwen Lisa, the Cultural and Natural Resources Manager for the Base. The data suggest that the Air Base is located in an area that has a very low site density at one site every 608 acres as indicated in Table V.A.1 above. Unfortunately, ASM does not have the survey and site data from DOD/DMAFB in its electronic data base as of yet, which is why they do not show on the site and survey map of eastern Pima County.

Site density figures for the remaining agency lands indicate a range of estimates, again determined by dividing the number of surveyed acres by the number of sites recorded. The BLM has the highest density at one site every 12.7 acres, a very high rate for eastern Pima County, but that is influenced by intensive and large scale survey involving BLM lands in the Cienega Creek area, which is known to have a high archaeological potential. Similarly, ASP/Catalina State Park, has a high density of one site per 37.8 acres, but this too is affected by the location of the survey along the Sutherland Wash an area rich in archaeology. Lands in the uplands managed by the NPS and the USFS have sites densities of one site per 84.4 acres and 57.6 acres respectively. State Trust lands, typically located in the lower elevations of Pima County between the major drainages and the mountain foothills, have a density of one site every 71.1 acres. Site density for Pima County lands, which range from lower to higher elevations, is one site per 62.2 acres. Over all, the site density figure for public lands in eastern Pima county is one site every 59.8 acres or 10.7 sites per square mile. This is somewhat higher than the 7.6 sites per square mile that has been calculated for all lands in eastern Pima County (Pima County 2000) and probably reflects the influence of low sample sizes and uneven survey coverage of the landscape.

Historic resources and traditional cultural properties are far fewer in number for all agencies. Historic resources reflect places that have been formally listed as historic properties on the National Register of Historic Places as indicated by the "nr" next to the data, but also other kinds of historic places such as ghost towns ("gt"), and historic trails ("tr"). The US Forest Service has more historic resources at six than any of the other agencies including four properties listed on the National Register and two ghost towns, followed by the BLM, ASLD, NPS, Pima County and ASP/Catalina State Park in descending order. These properties include prehistoric archaeological sites, 19th mining towns, a historic bridge, and a stage line. Three known traditional cultural places exist in eastern Pima County, two of which are on BLM lands, and one which is on City of Tucson property in downtown Tucson. For complete descriptions see Cushman (2000). In total, 2445 cultural resources are on public lands in eastern Pima County

| Agency | Size (acres) | # of Surveys | Acres surveyed | % Acres surveyed | # of Sites | # of HRs | # of TCPs | Total CRs |
|----------|--------------|--------------|----------------|------------------|----------------|----------|-----------|-----------|
| BLM | 178,199 | 4 | 11 | 0.006 | 9 | | | 9 |
| NPS | 330,689.5 | 3 | 7,675* | 2.3 | 178* (43.1) | 7nr | 2 | 187 |
| USFWS | 400,605.9 | 2 | 1.2 | 0.0002 | 4 | 1tr | | 5 |
| DOD/BMGR | 57,432 | 2 | 4,579.6 | 7.9 | 78 (58.7) | | | 78 |
| ASLD | 1,396.5 | 2 | 2.5 | 0.1 | 0 | | | |
| Total | 968,322.9 | 13 | 12,269.3 | 1.2 | 269 | 8 | 2 | 279 |

*corrected data

On the west side of the county, Table V.A.2 reveals a dramatically reduced effort to find cultural resources based on the survey data. This is also conveyed in the map on archaeological sites and surveys for western Pima County. All figures for the numbers of surveys, acres surveyed and percent of acres surveyed are low. The National Park Service has surveyed more acres of its lands within Organ Pipe National Monument (7,675), although the Department of Defense has looked at a higher percentage of the Barry M. Goldwater Bombing Range, which is managed by Luke Air Force Base (7.9%). A report drafted in 1995 indicates that 7,675 acres were surveyed with Organ Pipe National Monument and 178 archaeological sites were recorded (Rankin 1995). The data in the Arizona State Museum files indicates that only 15 sites have been recorded and only 293.4 acres have been surveyed. That the updated data on archaeological sites and surveys on the NPS lands are not in the Museum's data base highlights one of the problems that results when data are not regularly shared among agencies. The lack of these data explains why survey coverage and site locations are so under represented on the site and survey map for western Pima County. The US Fish and Wildlife Service has the lowest acreage and percentages of land surveyed for cultural resources in Western Pima County. These low figures are a product of both the mission orientation of the agency, which in the past has not included cultural resources as a management priority, and the fact that development is restricted on their lands. The survey total of 12,269.3 acres represents a little more than one percent of the total public lands in Western Pima County. Again, this means that just under 99 percent of the public lands in Western Pima County have never been surveyed for cultural resources.

Archaeological site totals also reflect the same difference in management orientation with the NPS and the DOD having the highest site counts and USFWS and ASLD having the lowest. The survey and site totals for the NPS and DOD allow for some rough estimates of archaeological site density on their lands. The Park Service recorded one site every 43.1 acres and one site every 58.7 acres was recorded on the Air Force bombing range. These estimates are also affected by small sample size and where and how the surveys were conducted. None of the data for the remaining agencies can

provide meaningful estimates for site density nor would an estimated site density for the whole of the public lands in western Pima county be practical using these data.

Historic resources and numbers of traditional cultural places are very low in count, with NPS having invested effort in listing seven historic properties on the National Register of Historic Places including mining and ranching properties, as well as two places considered to be sacred to the Tohono O'odham and Hia C'ed O'odham people. The USFWS has one historic trail, the Joronado del Muerto, cross its property. In total only 279 cultural resources are known in western Pima County based on the Arizona State Museum data and information from the National Park Service.

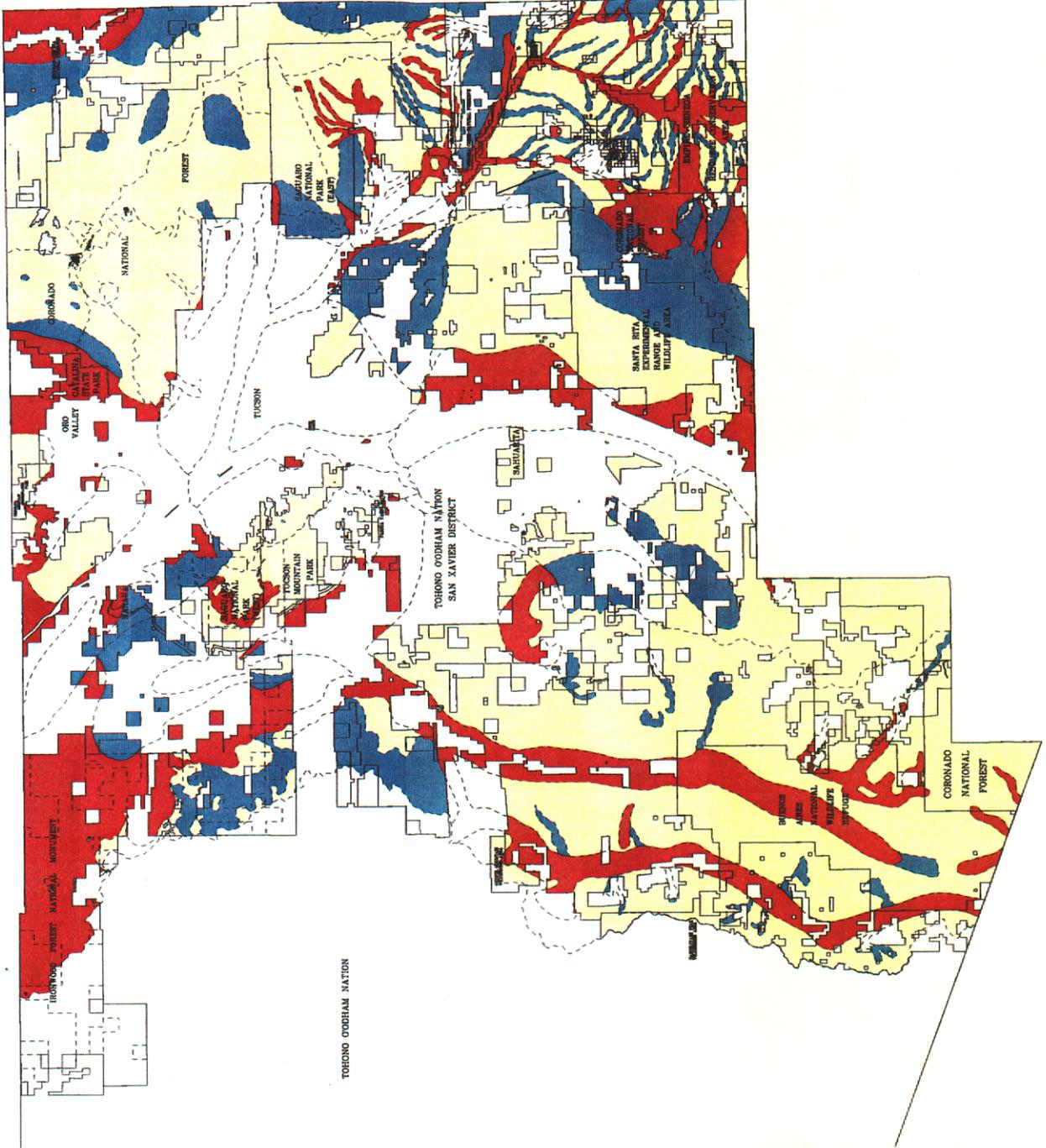
In sum, cultural resources are better known in eastern Pima County because a greater effort has been made to find, record and in some cases, register them than in western Pima County. Again, this is due in large part to a mixture of agency missions and development impacts that typically drive cultural resources surveys. It is fair to say, however, that based on these data the vast majority of public lands in Pima County have never been investigated and we can only guess at what they may contain or where to begin looking.

V. B. Predicting Archaeological Site Sensitivity on the Public Lands

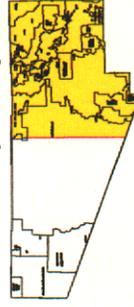
To help in predicting where archaeological sites might be expected to be found, Pima County assembled a team of archaeological experts to create maps that divided eastern and western Pima County into three zones of archaeological sensitivity: high, moderate, and low (Pima County 2000). This was done under the assumption that some parts of the landscape were more intensively used by human beings, that other areas were used less intensively, and some areas were hardly used at all regardless of the effects of time, culture or site function. These zones are the product of the professional experience of the team in concert with data on all known archaeological surveys and site locations. The maps are only a subjective expression of expert opinion, but nonetheless enables a means of estimating where archaeological sites should be found on the landscape for those parts of the county that have never been formally investigated. Maps showing the extend of the sensitivity zones on the public lands are presented below and entitled, "Archaeological Sensitivity Zones for Public Lands Eastern Pima County" and "Archaeological Sensitivity Zones for Public Lands Western Pima County" respectively.

Archaeological Sensitivity Zones for Public Lands Eastern Pima County

- High Sensitivity
- Moderate Sensitivity
- Low Sensitivity



Pima County Index Map



Index Map Scale 1:1,000,000

The information presented on this map is the result of a field survey conducted by the Pima County Technical Services staff in 2001. The map is intended for informational purposes only and should not be used for legal or regulatory purposes. The map is not a warranty of accuracy or completeness. The map is not a representation of the Pima County Technical Services staff or the Pima County Board of Supervisors. The map is not a representation of the Pima County Board of Supervisors or the Pima County Board of Supervisors.

Scale 1: 160,000

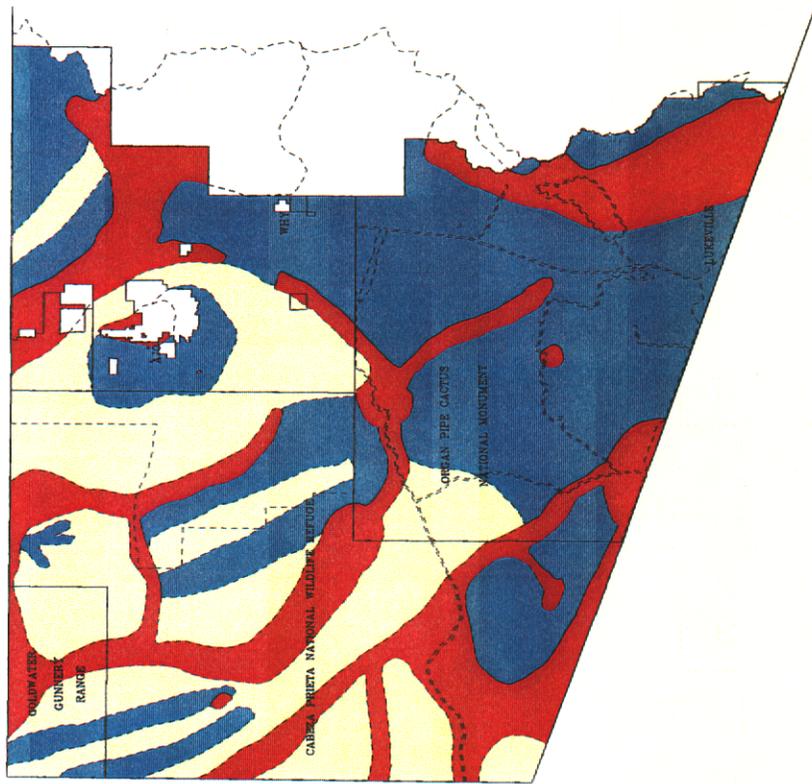


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Archaeological Sensitivity Zones for Public Lands for Western Pima County

- High Sensitivity
- Moderate Sensitivity
- Low Sensitivity



Pima County Index Map



Main Map Scale 1:100,000



Scale 1: 100,000

The information presented on this document is the result of a field survey conducted by the staff of the Pima County Technical Services, Inc. (PCTS) in cooperation with the Pima County Office of Cultural Resources. The information is intended for use in the planning and management of public lands. It is not intended to be used for any other purpose. The Pima County Office of Cultural Resources is not responsible for any errors or omissions in this document. The information is provided as a service to the public and is not intended to be used for any other purpose.



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| Table V.B.1. Comparative Analysis of Archaeological Sensitivity by Agency - Eastern Pima County | | | | |
|---|--------------|-----------|---------------|----------|
| Agency | Size (acres) | % of High | % of Moderate | % of Low |
| BLM | *255,386 | 42.2 | 18.6 | 39.1 |
| NPS | 91,987.2 | 16.1 | 21.7 | 62.1 |
| USFS | 331,355.1 | 10.3 | 20.1 | 69.5 |
| USFWS | 118,996 | 31.9 | 3.5 | 64.5 |
| BOR | 2,478.2 | 52.7 | 0 | 47.3 |
| DOD/DMAFB | 10,740.1 | 0 | 34.1 | 65.8 |
| ASP/CSP | 5,488.5 | 99.5 | 0 | 0.5 |
| ASLD | *737,739 | 20.7 | 17.9 | 61.2 |
| City of Tucson | 6,765.9 | 6.0 | 17.1 | 76.8 |
| Pima County | 31,758.4 | 16.9 | 2.1 | 80.8 |
| Total | 1,592,694 | 23.1 | 17.3 | 59.7 |

Table V.B.1 above provides data derived from the sensitivity maps and illustrates that there is considerable variability among the agencies in where the archaeological sensitivity zones fall relative to their land holdings in eastern Pima County. Note that an * symbol is placed by the land totals of some of the agencies to indicate that the totals used in this analysis are less than the agency acreage totals used in Table V.A.1. This is because the sensitivity assessments were conducted within the planning boundaries created for the Sonoran Desert Conservation Plan, which for some agencies does not include all public lands in eastern Pima County.

Looking at the total percentages for each sensitivity zone it is apparent that about 23.1 percent of the public lands include the highest zone of archaeological sensitivity in eastern Pima County, with a wide degree of variation among the agencies. Looking at the sensitivity map of eastern Pima County it becomes clear that the highest zones are those that are generally in close association with the major drainages in the region and some public lands include these area more than others. The agency with the highest high sensitivity lands is the BLM, which will soon be managing the Ironwood National Monument in the Avra Valley and that is predicted by expert opinion to be rich in prehistoric archaeological sites. The US Fish and Wildlife Service lands in the Buenos Aires National Wildlife Refuge in the Altar Valley is also predicted to have a high number of sites because of the presence of the Altar Wash. The ASP/Catalina State Park, 71% of which has been surveyed, is predicted to consist almost entirely of the high sensitivity zone.

Public lands predicted to have a more moderate sensitivity for archaeological sites indicate that only about 17.3 percent in total will contain sites at this more moderate level. Again there is variation among the agencies ranging from 0 percent (BOR) to 34.1 percent (DOD/DMAFB). The map indicates that these lands are generally located in areas adjacent to the high sensitivity zones. The public lands with the lowest sensitivity make up about 59.7 percent of the total indicating that by-in-large the majority of the landscape that today make up the public lands were used by past peoples at a low level of intensity. With the exception of State Parks, all the agencies have high percentages of low sensitivity zones on their lands. This may be expected in areas that are in higher elevations in eastern Pima County, such as the lands managed by the National Park Service, the US Forest Service, The City of Tucson and Pima County. Lowland areas lacking in major drainages or other water sources are also considered to have a low sensitivity such as those lands managed by the Arizona State Land Department and the DOD/Davis-Monthan Air Force Base.

In terms of past land use behavior in eastern Pima County, it is assumed that during the prehistoric era the high sensitivity areas adjacent to sources of water and close to farm land will have evidence of the highest level of land use, principally for habitation. Those areas that have a more moderate sensitivity may have been used for limited activities such as gathering wild foods, and non food resources needed to fashion tools and weapons. And the low sensitivity zones, especially in the mountains, would have been used for hunting and gathering resources available in the uplands. Historically, much the same pattern can be expected to hold for the high sensitivity zones, that is the river drainages and other sources of water were used for habitation and farming. Grazing activities would have involved the lower and mid elevations in areas with good grass and access to water sources while mining and logging activities occurred in the uplands. These differences in the way the land was utilized will have left different archaeological indicators of that use and can be roughly predicted.

| Table V.B.2. Comparative Analysis of Archaeological Sensitivity by Agency - Western Pima County | | | | |
|---|--------------|-----------|---------------|----------|
| Agency | Size (acres) | % of High | % of Moderate | % of Low |
| BLM | *174,896 | 23.9 | 25.6 | 50.3 |
| NPS | *328,781 | 26.9 | 66.8 | 6.2 |
| USFWS | 400,605.9 | 30.0 | 21.4 | 48.5 |
| DOD/BMGR | 57,432.3 | 28.3 | 12.6 | 59 |
| ASLD | 1,396.5 | 22.1 | 51.9 | 25.9 |
| Total | 963,111.7 | 27.7 | 41.7 | 30.5 |

Table V.B.2 present the break down of archaeological sensitivity for western Pima County. Again, the agencies exhibit differences in the percentage of sensitive lands that they manage. The USFWS

with the largest territory has the highest percentage of the most sensitive land, and ASLD has the lowest. The relative amount of moderate and low sensitivity lands varies as well but with a wider spread than the high sensitivity lands, with the DOD/BMGR having the lowest percentage of lands in the moderate sensitivity category and the National Park Service having the highest. The same pattern is repeated for the lands considered to have the lowest archaeological sensitivity. The patterning is evident in the accompanying archaeological sensitivity map for western Pima County. So little is known about the archaeological record in western Pima County, that it is difficult to characterize the land use behaviors that created it, although it is known that both sedentary agriculturalists and mobile hunter gatherer populations inhabited the region over time (Rankin 1995). The severity of the climate in the western Papaguera is such that human existence is predicted to have become more challenging the farther west one goes (Alhstom 2000). As such, proximity to water, both drainages and tinajas, or natural tanks, would have been essential to life during all time periods, and the highest sensitivity zones can be expected to exhibit habitation and resource processing functions. The more moderate zones are believed to be associated with Palo Verde mixed cactus vegetation that would have supported a range of activities associated with hunting and gathering seasonally available resources. The low sensitivity zones may have been used for short term, limited activities such as resource procurement. Historically mining and ranching dominated use of the landscape (Rankin 1995)

Comparing the total percentages for each zone between the eastern and western sides of Pima County, the west has more high and moderately sensitive lands than the east, and the east has more low sensitivity lands. This may be due in part to the way in which sensitivity was assessed between the two areas. The sensitivity zones in western Pima county utilized data on vegetation to predict human land use based on modeling done on the DOD/Barry M. Goldwater Bombing Range (Ahlstrom 2000), whereas the assessments for eastern Pima county were based more upon actual on the ground survey coverage and data on archaeological sites. As a consequence, sensitivity estimates for eastern Pima County may be more accurate.

With slightly over 1 percent of the public lands having been formally investigated, much remains to be learned about western Pima County. Again, given the harshness of the environment it is reasonable to assume that fewer people living in smaller more dispersed groups occupied this area through time than the comparatively well watered eastern half of the county. Nonetheless, if only one archaeological site per square mile is used as a relative site density for the region, there are nearly 10,000 archaeological sites on the public lands in western Pima County, and the bulk of these are on USFWS Lands, which have received the least amount of investigation.

While more is known about the east, it too suffers from low levels of uneven survey coverage thus effecting the picture of human lands use through time. Different sensitivity zones can be expected to exhibit different site densities, but determining exactly what these are is beyond the scope of the present study. If, however the regional average of one site per 84.2 acres (7.6 sits per square mile) is used for just the high sensitivity zone alone, then approximately 4400 archaeological sites will be found in these areas with the majority of these being on BLM lands near the new Ironwood National Monument. It is likely that this figure is considerably higher, however. The point is that cultural

resource management in both eastern and western Pima County involves great uncertainties about the full extent and nature of the archaeological record in particular.

The value of these sensitivity maps is that in the absence of adequate survey coverage, they present at least an educated guess on which parts of the landscape may be more or less sensitive for archaeological sites. Furthermore, these guesses can be tested and refined, and the more that they are, the more useful they will become as predictive statements with potential application as planning and management tools. The bottom line is that more sites can be expected on agency lands that have a large percentage of the high sensitivity zone, and less so for public lands that are largely characterized by the low sensitivity zone. The maps can be used to anticipate where agency actions may have the greatest effect on the resources and conversely where there may be the best conservation opportunities.

V. C. Comparative Management Analysis

The interviews presented in Section II give brief insights on management practices regarding cultural resources. This allows a comparison of all CRM programs.

| Table V.C.1. Comparative Cultural Resources Management Analysis by Agency | | | | | | | | |
|---|-------------|------------------------|---------------|------------------|-------------|-----------|---------------------------|------------------------|
| Agency | Start Date | Purpose | Actions/ Year | Staff | Pro Active? | CRM Plans | Identified Threats | Program Needs |
| BLM | Early 1970s | Compliance/ Protection | 35 | 2 | Yes | Yes | Urban Encroachment | Inventory Funding |
| NPS | Mid 1970s | Protection/ Education | 5-10 | 1 | Yes | Yes | Urban Encroachment | Inventory Registration |
| USFS | 1976 | Compliance/ Protection | 60-100 | 2 full 3 part | Yes | Yes | Erosion/ Vandalism | Planning Funding |
| USFWS | Late 1970s | Compliance | 12-15 | 1 | No | No | Erosion | None Identified |
| BOR | 1970s | Compliance | 1-2 | 2 | No | Yes | Vandalism | Inventory Funding |
| DOD/ DOD/DM AFB | 1989 | Compliance | 5 | 1 | No | Yes | Development | Registration |
| ASP/CSP | 1993 | Protection/ Education | 20 | 1 | Yes | Yes | Overuse of resources | Inventory Restoration |
| ASLD | 1985 | Compliance | 600* | 1 | No | No | Encroachment/ Development | More staff |
| City of Tucson | Late 1980s | Compliance/ Protection | 275 | 2 full 2 part | Yes | No | Development | Planning |
| Pima County | 1983 | Compliance/ Protection | 320 | 2 | Yes | No | Development | Inventory Funding |

*statewide average

Table V.C.1 above presents an analysis of some of the salient points that have emerged in comparing the CRM programs in Pima County. Most programs began in the 1970s, with the City of Tucson taking the lead by creating the Tucson Pima County Historical Commission in 1971, and the federal land managers following some years later. The federal agencies acted in large part to changes made in the regulations implementing the National Historic Preservation Act in 1972. The City of Tucson reacted to the adverse effect of urban renewal on the historic core in downtown Tucson by creating the Commission; however, plans review did not become institutionalized within city staff until the late 1980s. Pima County also reacted to the effect of urban renewal by establishing its Historic Zone Code in 1972 but it too didn't begin to incorporate cultural resources into plans review until 1983. The latest agency to join in cultural resource management is Arizona State Parks in 1993.

The purpose of these programs varies from strictly legal compliance (US Fish and Wildlife Service, DOD/David -Montan-Air Force Base, and the Arizona State Land Department) to a mixture of compliance and resources protection (Bureau of Land Management and US Forest Service) to compliance with a focus on education and recreation (National Park Service and Arizona State Parks). The purpose differs depending on the mission of the agencies and their responsibilities under the law.

The number of compliance actions varies considerably from a low of one or two projects a year (Bureau of Reclamation) to a high of 320 (Pima County). Note that the Arizona State Land Department averaged about 600 action per year, but this is for the state as a whole - the number of actions occurring in Pima county was not known) The City of Tucson has the second highest number of compliance actions in Pima County followed by the USFS. Numbers can be deceiving, however. A single project can take months of review and consultation to complete or can be taken care of in five minutes depending on what the actions is and whether there are effects to cultural resources and if others need to be consulted about how to manage those effects.

Staff is a critical measure of both investment in and commitment to cultural resources management. Some agencies such as the USFWS do not have cultural resources staff in the state of Arizona. Others have a single person in Phoenix, such as the ASLD and ASP. The US Forest Service has five people who are available for work on the Forests in Pima County, although only two of these are full time. Similarly, the City of Tucson has a large staff whose jobs include historic preservation. While Pima County has had two full time staff members since 1998, it has just recently hired two more full time personnel giving the county the distinction of a having the greatest number of full time staff devoted to historic preservation and cultural resources management in Pima County.

Many of the CRM programs started out as strictly compliance oriented endeavors with a single objective: to meet the requirements of the law as needed. Some, such as the ASLD, DOD/DMAFB and USFWS have cultural resource management programs that continue to be completely reactive in nature. Other agencies, however, have added more proactive components to their programs to include outreach efforts to educate and inform the public about historic preservation and their programs. The US Forest Service is a good example of an agency that has made this transformation and now includes proactive elements to their CRM program. This has happened in large part to a

formal recognition that historic preservation and the management of cultural resources are activities that are mandated under law and often funded using public tax dollars. As such, the agencies have come to recognize that to serve the public interest it is necessary to inform and engage the public in preservation. Some agencies do this directly, for example, the US Forest Service's Passport In Time program invites the public to join in preservation projects on Forest lands. Others prepare brochures on their programs or on aspects of preservation law that the public needs to know. Often, these agencies participate in large community gatherings such as the Archaeology Expo organized as part of the Arizona Archaeology Month by the State Historic Preservation Office. The difficulty for some agencies is that proactive activities require staff time and funding, which is not always available. The Arizona State Land Department's CRM program for instance has no funding at all other than the salary for its single staff person. This necessarily limits what can be done that is above and beyond the focus on legal compliance.

Almost all the federal agencies have management plans in which cultural resources are included. This varies between agencies from the National Park Service that has developed CRM plans for each unit in Pima County to the US Fish and Wildlife Service that includes cultural resources as only one part of a larger management document for their land holdings. The Arizona State Land Department has not developed either a stand alone plan for CRM or included cultural resources in any other planning document. Arizona State Parks, however, is incorporating cultural resources into plans that are being developed for each park. The City of Tucson does not include cultural resources in management plans for its lands and Pima County has only incorporated cultural resources into the management plans for Colossal Cave, Agua Caliente Park, and the Cienega Creek Nature Preserve, but not for its remaining lands.

Threats to cultural resources are pretty uniform across the board as depicted in Table V.C.1. With few exception, all agency personnel interviewed identified some aspect of human behavior as the greatest threat to cultural resources on their lands, be that vandalism, development, over use of the resources, or the more ambiguous "urban encroachment." In short, the landscape is being impacted and the resources on the land are being negatively affected as a result.

Lastly, the identified needs are similarly consistent from one agency to another. Almost every agency contact interviewed for this report said that their program needed more funding and more inventory. More money to do what is needed and more inventory to build a baseline of information on the number and kinds of cultural resources for which they have management responsibilities. Four of the five federal land agency staff identified either funding or inventory or both as a priority. The National Park Service sees registering more of their cultural resources on the National Register of Historic Places as a priority to give their resources official recognition, as does the DOD/ Davis-Montan Air Force Base for its Cold War historic structures. The US Forest Service staff sees planning as a need for the future. For State Lands, the priority is more staff just to meet the demands of the program as currently defined. The State Parks representative noted the need to do more restoration of the historic buildings for which they are responsible; this tracks with the comment that overuse of the resources is the biggest threat the parks face. The City of Tucson would like to see more planning activities in their future and Pima County, like the federal agencies, wishes to do more

inventory of its lands.

In sum, this analysis shows real differences in history, mission, and legal mandate among the agencies with CRM responsibilities, but real similarities among them are also revealed. All agency contacts recognized that there is more that needs to be done to improve the effectiveness of their programs but that there are limits in time, money, and manpower that must be overcome. As noted previously, the resources themselves are very similar from one agency to another, especially in the non urbanized portions of Pima County where archaeological sites are the predominant type of cultural resources. And it is clear from this analysis, that the threat to those resources from human action is well recognized and shared among all agencies.

V. D. Protection Status for Cultural Resources in Pima County

The last part of this section addresses how well cultural resources in Pima County are being protected. This analysis is based on a detailed study prepared by Recon, Inc., an environmental consulting firm, that looked at the effect of land management on bio-diversity for both public and private lands in Pima County (Recon 2000). The study utilized the Gap analysis Program (GAP), a national mechanism for ranking of the conservation status of land. A similar effort is made here to examine cultural resources protection by looking at the combination of legal mandates, management history, and the relative extent of ground disturbance that can and does occur effecting cultural resources. The analysis is divided into two parts: cultural resources protection on public lands and cultural resources protection on private lands. For each part, relative levels of cultural resource protection are defined. For comparison, the GAP Status is provided following the definitions presented in Appendix C (Recon 2000). The results are presented graphically in four maps, two for the public lands in eastern and western Pima County and two for the private lands, which are included at the end of this section. The public land maps are entitled, "Public Lands by Relative Levels of Cultural Resources Protection, Eastern Pima County" and "Public Lands by Relative Levels of Cultural Resources Protection, Western Pima County." The private land maps are entitled, "Private Lands by Relative Level of Cultural Resources Protection Eastern Pima County" and "Private Lands by Relative Level of Cultural Resources Protection Western Pima County."

1. *Areas where cultural resources are protected by federal preservation laws, included in management planning, and preserved due primarily to the exclusion of land use activities that could adversely effect wild life habitat.*

| <u>Agency/Management Unit</u> | <u>GAP Status</u> |
|--------------------------------------|-------------------|
| • US Forest Service Wilderness Areas | |
| Rincon Mountain, | 1a |
| Pusch Ridge | 1b |
| Mount Wrightson | 1b |

- BLM Wilderness Areas
 - Baboquivari 1a
 - Coyoto Mountain 1a
- USFWS Wilderness Areas
 - Cabeza Prieta 1a
- NPS Wilderness Areas
 - Saguaro National Park East 1a
 - Saguaro National Park West 1a
 - Organ Pipe Cactus National Monument 1a
- USFWS National Wildlife Refuges
 - Buenos Aires 1a
 - Cabeza Prieta 1a

By virtue of their designation as Wilderness Areas under the Wilderness Act of 1964, resource extraction, development, including the use of motorized vehicles, or any other land use action that may threaten habit are prohibited. Designation gives permanent protection to land resources while enabling limited public use. Administrative actions may have the potential to effect cultural resources, and are treated in accordance with federal law, but by in large these lands, and the cultural resources they contain, are protected. The USFWS also manages the Buenos Aires NWR and the Cabeza Prieta NWR under the authority of National Wildlife Refuge Act (Recon 2000). Use of these lands is similarly restricted, although not to the same extent, resulting in a relatively high level of cultural resource protection. This level of cultural resources protection is equivalent to GAP status 1a and 1b indicating a very high level of conservation value.

2. *Areas where cultural resources are protected by federal, state, or county preservation laws, included in management planning, and minimally effected due to restricted land use activities.*

| <u>Agency/Management Units</u> | <u>GAP Status</u> |
|--|-------------------|
| • BLM Empire-Cienega Resources Conservation Area | 3b |
| • BLM Sonoita Valley Acquisition Planning District | 4a |
| • BLM Ironwood Forest National Monument | 2 |
| • BLM Empire Ranch | 3b |
| • NPS Saguaro National Park East | 1b |
| • NPS Saguaro National Park West | 1b |
| • NPS Organ Pipe National Monument | 2 |
| • BOR CAP mitigation land | 2 |
| • ASP Catalina State Park | 2 |
| • Pima County Colossal Cave | 3a |
| • Pima County Cienega Creek Nature Preserve | 3a |
| • Pima County Agua Caliente Park | 3a |

The next level of protection are afforded cultural resources on public lands where land use is allowed

but is restricted to activities such as recreation and grazing where permitted. Again, administrative uses of the land also have the potential to effect cultural resources. In all, however, these activities result in low intensity, but cumulative impacts to cultural resources, especially archaeological sites. Lands include federal parks and monuments, Bureau of Reclamation CAP mitigation land, ASP/Catalina State Park, and Pima County Parks where cultural resources have been included in planning. The Gap Status ranges according to agency and management unit from 2 to 4a indicating a moderate level of protections for biodiversity depending on agency and management unit.

3. *Areas where cultural resources are protected by federal, state, county, or city preservation law, are not included in management planning, but are minimally affected by restricted land use practices.*

| <u>Agency/Management Unit</u> | <u>GAP Status</u> |
|--|-------------------|
| • ASLD Santa Rita Experimental Range | 3b |
| • City of Tucson A7 Ranch | 4a |
| • Pima County Tortolita Mountain Preservation Park | 3a |
| • Pima County Tucson Mountain Park | 2 |
| • Pima County Arthur Pack Park | 3b |
| • Pima County Southeast Regional Park | 3b |

The primary difference between this level and the protections afforded in level #2 is lack of planning. Since it is not possible to adequately manage something without planning for it, cultural resources in these areas are exposed to greater threat even though land use activities on these lands are similarly restricted. These lands consist of the remainder of the county parks, as well as the Santa Rita Experimental Range leased to the University of Arizona and the City of Tucson A7 Ranch. Again, impacts are due to low intensity land use associated with either recreation, range management or administrative activities. Gap Status indicates that some lands have permanent protection from conversion of natural cover in place and others do not.

4. *Areas where cultural resources are protected by federal preservation law, are included in management planning, but are subject to and affected by extensive and or intensive land use practices or development.*

| <u>Agency/Management Unit</u> | <u>GAP Status</u> |
|--|-------------------|
| • BLM (remaining lands not included in #1 or #2 above) | 4c |
| • USFS non wilderness areas | 3b |
| • Davis--Montan Air Force Base | Unknown |
| • Barry M. Goldwater Bombing Range | 3b |

While protected by federal preservation law and agency policies, which generally afford the highest level of protection to cultural resources, large amounts of the federal lands in the west are open to

potential exploitation by both public agencies and private companies. In Pima County, the US Forest Service lands are available for and have experienced intensive land use activities associated with mining and timbering, as well as, prescribed burns, road construction, range allotment improvements, facility construction, and hazardous materials clean-up (See Section II). Similarly, BLM lands in Pima County have been affected by natural gas pipe lines, utilities, fiber optic lines, road construction, as well as grazing, range management, and recreation related impacts. Davis--Montan Air Force Base is a military establishment that experiences constant modification to its building stock that can and does affect historic structures. The Barry M. Goldwater Bombing Range is also an active military establishment that involves activities that require managing effects to cultural resources (Ahlstrom 2000). All these agencies include cultural resources in their planning but impacts to cultural resources can be, and have been, more adverse and more extensive than in level #3. GAP Status indicates a low level of protection for biodiversity.

5. Areas where cultural resources are protected by state preservation law, are not included in management planning, but are subject to and affected by extensive and or intensive land use practices.

Agency/Management Unit

GAP Status

- All other State Trust Lands

4a

The State Land Department manages the state trusts lands for one purpose and that is disposal to raise funds for the state beneficiaries, primarily the public schools. Cultural resources are not included in land management planning and are managed in accordance with state law only when they will be affected (Pima County 2000). Impacts to cultural resources range from low level, but commutative, effects of grazing to road and utility construction to residential development when state lands are sold to private parties. In these instances impacts are usually avoided when possible but if not then some form of treatment is generally required before the cultural resources are destroyed. Under existing state law, those resources that are spared cannot be conserved. The lack of planning and management coupled with the potential to convert Trust lands into private property gives cultural resources on these lands a relatively low level of protection. GAP Status indicates that State Trust lands are unprotected for biodiversity but that land use practices do not limit conservation values.

Private property, while not publically managed, is also affected by public mandates that control its use. In this sense cultural resources can be managed, or more precisely, impacts to cultural resources can be and are managed in some instances. Presented below is a description of the relative levels of protection afforded cultural resources on private lands through state and local laws and regulation affecting land use and development.

1. Areas where cultural resources are protected by county development requirements, not included in management planning, but are minimally affected due to restricted land use practices.

Jurisdiction

GAP Status

- The Nature Conservancy
Buehman Canyon

1b

The Nature Conservancy has land in the San Pedro River Valley (Buehman Canyon), which is protected for its natural resources conservation values, that also contain cultural resources (Linda Mayo, Personal communications). While not a part of its overall mission, cultural resources benefit from the general conservation orientation of the organization, which restricts land use. Other smaller private land holdings would fit in this level, such as the Tohono Chul Park in northwest Tucson. GAP Status indicates a very high level of protection for biodiversity.

2. Areas where cultural resources are protected by city law, managed according to development review requirements, but affected by limited development.

Jurisdiction

GAP Status

- City of Tucson local historic districts.

4f

The second level of cultural resources protection is associated with the City of Tucson's five locally designated Historic Districts, which are subject to specific development requirements structured to ensure the preservation of their historic character. Through regulation, development including modifications, additions, new construction and demolition within the districts is subject to review and approval. In this manner impacts to historic buildings are controlled (Mayro and Cushman 1999). GAP Status indicates that the area is developed with little conservation value.

3. Areas where cultural resources are protected by county law, managed according to development requirements, and subject to and affected by extensive and or intensive land use practices or development.

Jurisdiction

GAP Status

- Unincorporated Pima County
- City of Tucson (Outside of local historic districts)

4a, 4b, 4c, 4f

4c, 4f

The third level of protection afforded cultural resources applies to private property in the unincorporated portions of eastern Pima County. The county has a set of cultural resources requirements that apply to grading in preparation for certain kinds of development and in all land rezoning cases. The requirements are to locate, evaluate, and treat the effects of proposed development on significant cultural resources. Subdivision development, commercial development, development under a county Specific Plan or that results through a Comprehensive Plan amendment are all subject to these cultural resources requirements. Pima County's own public works projects

must also meet the same standards set for private development giving the county control over its own actions regarding cultural resource protection. Pima County has also begun to include cultural resources in long term planning as part of its efforts to develop the Sonoran Desert Conservation Plan (Pima County 2000). In all, Pima County has one of the most comprehensive set of cultural resources requirements in the state. GAP Status indicates a range of unprotected and developed lands with minimal conservation values, although Pima County has private lands that are not used in a manner that limits conservation value.

The City of Tucson's requirements outside of its Historic Districts are less comprehensive in scope than those of Pima County's. For instance, the city has no equivalent process to require cultural resources assessments prior to development (Mayro and Cushman 1999). It does, however, adopt Pima County's cultural resources requirements when county lands are annexed into the city. This is not insignificant given the size of some of the recent city annexations. The city of Tucson engages in preservation planning as part of its interest in listing properties on the National Register of Historic Places and in creating its own historic districts. While historically, the city's interest has been directed to historic buildings and less so to the archaeological record, the recently approved Rio Nuevo revitalization project will require a significant planning effort involving archaeological sites.

4. Areas where cultural resources are protected by municipal law, managed according to development requirements, and subject to and affected by extensive and or intensive land use practices or development.

Jurisdiction

GAP Status

- Oro Valley

4b, 4c, 4f

Oro Valley has a preservation ordinance on the books that requires archaeological investigations prior to development in some cases. The ordinance is being enforced, however, at present there is no one on staff who is qualified to oversee it and to interpret the results of studies that are performed pursuant to the law. The town does not include cultural resources in its planning and so what action is taken to protect cultural resources is purely reactive and project specific. GAP Status indicates a range of unprotected lands with varying levels of impact limiting conservation value.

5. Areas where cultural resources are not protected by law, are subject to development conditions that include cultural resources only on occasion, and affected by extensive and or intensive land use practices or development.

Jurisdiction

GAP Status

- Marana
- Sahuarita

4a, 4b, 4c, 4f
4b, 4c, 4f

This level of cultural resources protection applies to private lands in municipalities that have no legal requirement to consider the effects of development on cultural resources as part of the development review process. To their credit, both Marana and Sahuarita have added survey, testing, and treatment requirements to development projects on an ad hoc basis. Marana has established a relationship with the Arizona State Museum where the state provides guidance and recommendations to the town on issue related to cultural resources, principally archaeological sites. It has also begun to include archaeological sites in some planning. Sahuarita looks to the Pima County for technical assistance on occasion (Linda Mayro, personal communication) GAP Status indicates that lands in Marana are like those in unincorporated Pima County; all lands are either unprotected or developed but some lands are without use that limit conservation value. Private lands in Sahuarita look closer to the City of Tucson in terms of their GAP Status.

In sum, cultural resources in eastern Pima County enjoy a sliding scale of protection that varies according to whether the resources are located on public or private land and then by what kinds of legal protections apply, if cultural resources are included in management planning or not, and how the land is typically used. Federal Wilderness Areas provide the greatest protection for cultural resources by virtue of how that land can be used. In this case, legal protection and planning, while important, are outweighed by the restricted nature of land use coupled with their remote access as factors protecting cultural resources. Public lands with the lowest protection for cultural resources are State Trust lands because of the limited nature of legal protection, the lack of management planning, and because State Trust lands can and are used for a variety of activities that are damaging to cultural resources.

Cultural resources on private lands in general are less protected than on public lands but this too varies depending on jurisdiction and how cultural resources are included in the development review and approval process. Cultural resources on private lands that are managed for conservation purposes enjoy the highest protection in much the same way as in federal Wilderness Areas. These lands are highly limited, however. More typical are private lands that are subject only to local development requirements if and when a proposed land use requires review and if cultural resources requirements apply as is the case for private land in Pima County and in the City of Tucson. In some cases, such as Marana and the Town of Sahuarita, there is no legal protection and little or no planning for cultural resources, but both governments do on occasion require that developers check for cultural resources before development is approved. While this doesn't provide much protection, at least the destruction of cultural resources can be controlled.

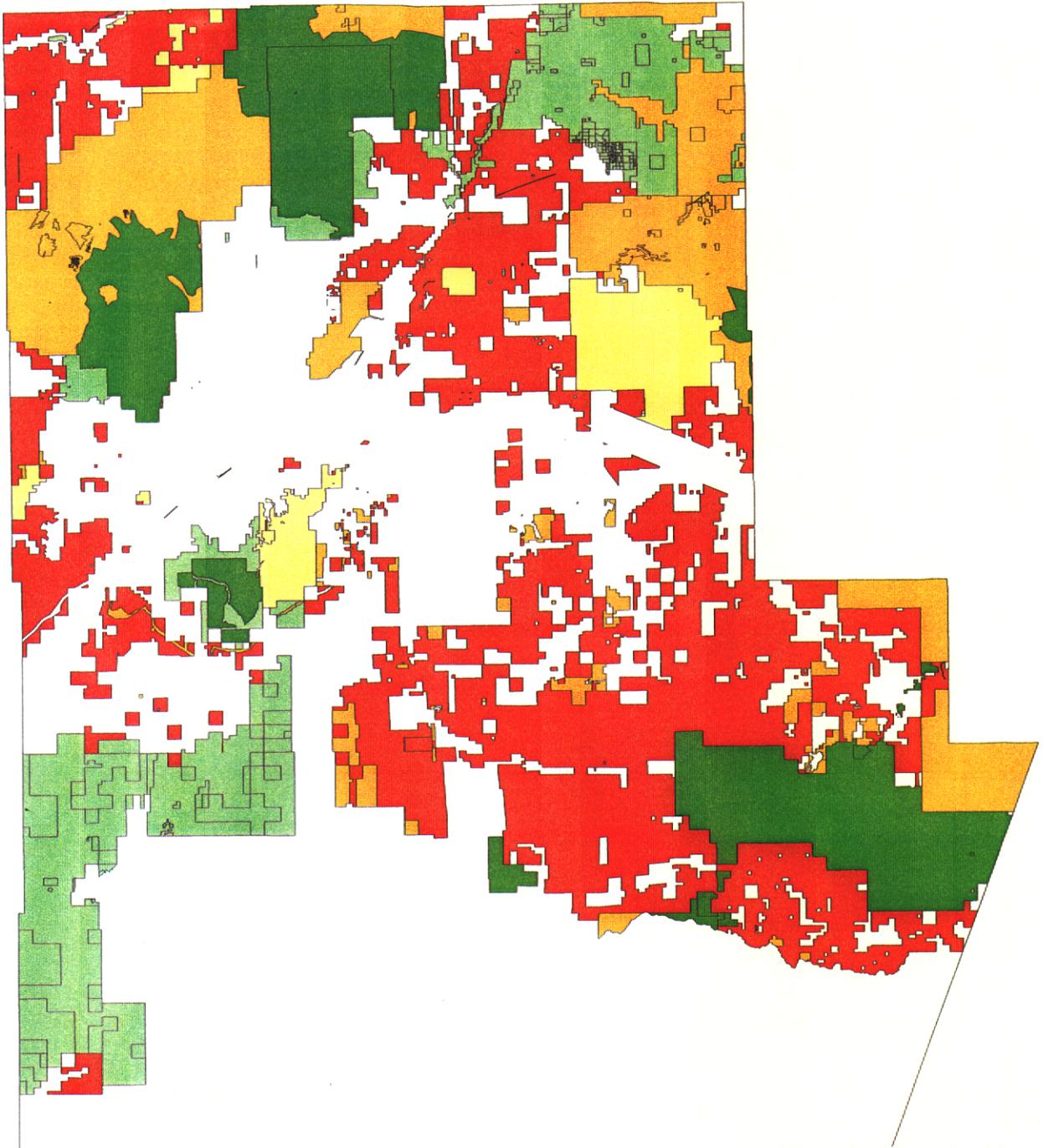
The GAP Status is measuring protections for biodiversity not cultural resources; however, the analysis tracks pretty closely with that of cultural resources protection. It may be that land use practices and policies that disrupt plant and animal communities affecting biodiversity are also the kinds of activities that impact cultural resources, especially archaeological sites. There are some obvious examples of how the two analysis are not parallel. For instance, the City of Tucson's historic districts protect parts of the built environment deemed historically important that by virtue of their having been developed have little or no value for biodiversity. There appears to be closer correlation between the GAP Status analysis and cultural resources protections on the public lands than for the

private lands. This is due in large part to the differences in resolution in the two analyses. The GAP Status is applied down to the parcel level, which shows great variability in how private lands are used affecting biodiversity. On the other hand, the analysis on cultural resources is more generic looking at protections afforded classes of lands representing individual jurisdictions. A parcel based analysis of private land might prove very helpful in the future. Despite these difference, it appears that on gross level analysis of the protections for biodiversity may be used as a proxy for cultural resources protection, particularly in rural settings on public lands.

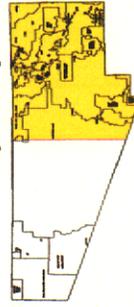
Public Lands By Relative Level of Cultural Resources Protection

Eastern Pima County

- Level 1
- Level 2
- Level 3
- Level 4
- Level 5



Pima County Index Map



Index Map Scale 1:1,000,000



Scale 1: 160,000

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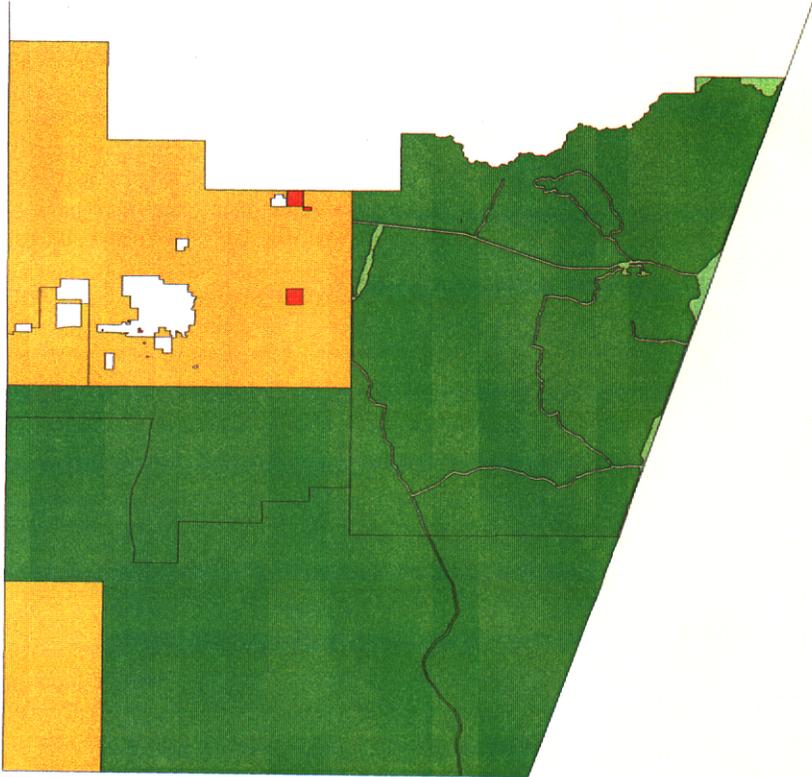
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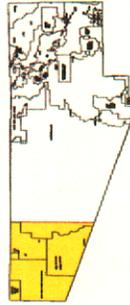
Public Lands By Relative Level of Cultural Resources Protection

Western Pima County

- Level 1
- Level 2
- Level 3
- Level 4
- Level 5



Pima County Index Map



Scale Map Scale 1:100,000



Scale 1: 100, 000

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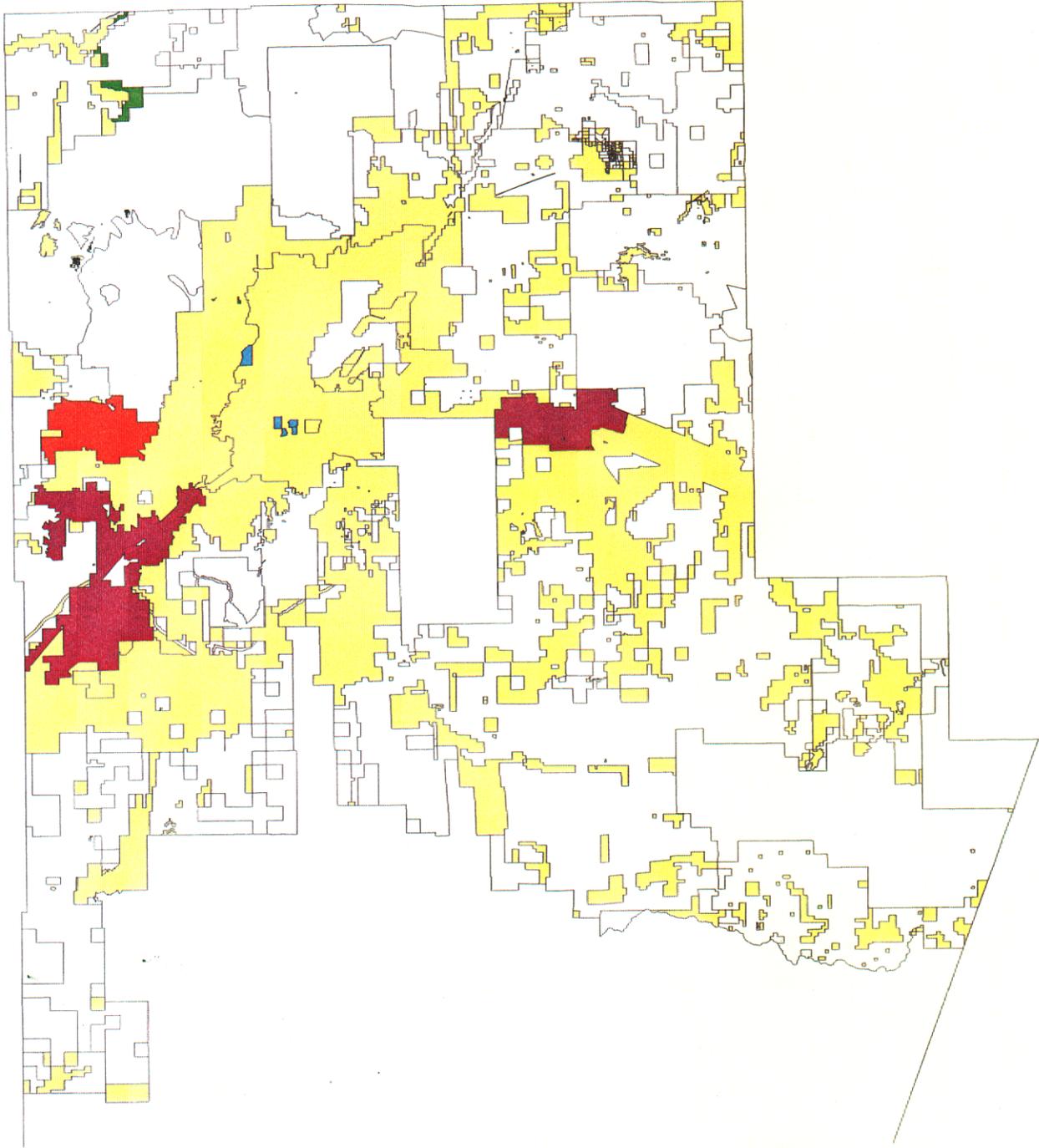


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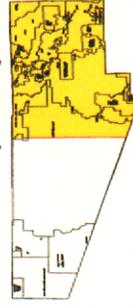
Private Lands By Relative Level of Cultural Resources Protection

Eastern Pima County

- Level 1 
- Level 2 
- Level 3 
- Level 4 
- Level 5 



Pima County Index Map



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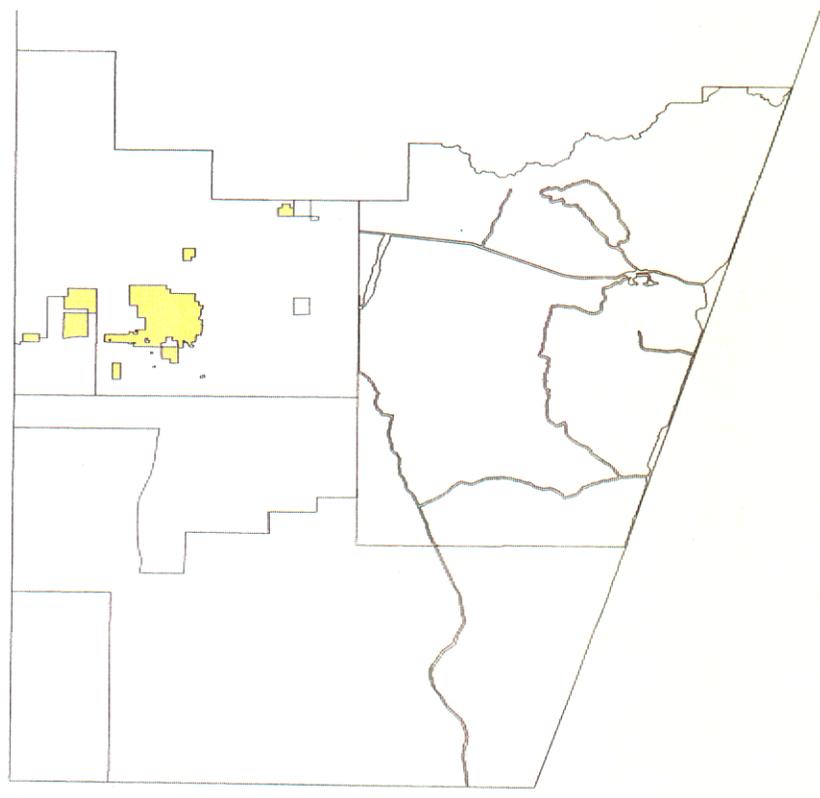
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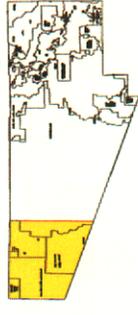
Private Lands By Relative Level of Cultural Resources Protection

Western Pima County

- Level 1
- Level 2
- Level 3
- Level 4
- Level 5



Pima County Index Map



Index Map Scale 1:1,000,000

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VI. Recommendations

Presented in this section are recommendations that are derived from the findings of this study. These focus on the need to develop an adaptive management strategy for CRM on a regional scale.

VI. A A Regional Cultural Resource Management Strategy

1. Common Management Goals and Strategies

It is clear from this study of 10 CRM programs in Pima County that there are a variety of responses to meeting cultural resource management needs. These vary depending upon the mission of the agency, their legal mandates, the threat to the resources, and their ability to address those threats, among others factors. But there are also some common needs as well. For instance, every agency person interviewed identified inadequate funding as a significant impediment to what could be achieved. The land managers also identified the need to complete inventories of their lands as a basic goal as well as preparing cultural resource management plans for the first time or updating old plans. However, there are some other factors that all agencies share. In many cases, the kinds of resources are similar (both historic and prehistoric in age), and all agency personnel, except one (US Fish and Wildlife), mentioned threats to the resource that are associated with public land use or private land development. Given the chronic problems with funding, the similar nature the resources and the common threats to their existence, it seems reasonable to start combining efforts in a way that enhances cultural resource management on a regional level while at the same time meeting individual agency responsibilities. Identifying common goals and strategies for managing the regions cultural resources would elevate the practice of CRM to the level where the threats and impacts are occurring and would enable a better overall response on the part of individual agencies both financially and procedurally.

2. Data Centralization/Data sharing

One way of beginning to achieve this economy of scale is through data sharing and data centralization. The Arizona State Museum has the largest and most complete file on archaeological sites and surveys of any institution in southern Arizona. These files have recently been automated and are available in electronic format. However, not all land managing agencies routinely submit their records to ASM for entry in the system. There are historical reasons for this; in the past agencies kept their own records for their own use because it was easier to access the information and control the access of others. The problem is that ASM has an incomplete data base and the lack of comprehensive information held in one place hinders resource planning, management and research. Conversely, if all agencies were to regularly contribute their data to ASM, all of those activities would benefit, which in turn would provide for better management of the resources by all agencies. This would require annual funding by each agency under agreement with the Museum that would maintain the data, and make them available to the agency as needed. Since the database is soon to be accessible via the Internet, now is the time for the agencies to enter arrangements with the Museum that create a useable centralized database for southern Arizona.

3. Para Professionals/Site Stewards

With few exception, protection of cultural resources is viewed as beneficial and is part of the mandate of all of the agencies that were contacted. Yet funding and manpower limitations effect management, seriously in some cases. The practical implications are that few people are able to actually go on the ground to monitor archaeological sites or other kinds of cultural resources. This means that if and when there are problems with vandalism, looting, or other kinds of damage both manmade and natural, there is often no way of addressing these problems or even knowing that they exit. It is for this reason that the Arizona Site Stewards program was developed. Many of the federal and state land managers participate in the program and some local governments do too. Organizing the Site Steward program on a regional level would allow threats to be determined on a larger scale then presently envisioned and thus where the stewards should go to achieve the greatest good. Cooperation among the land managers and other agencies with lands containing cultural resources, like Pima County, would enable this kind of planning. Another part of this effort could involve para professionals, which are used by the federal land managers to assist their cultural resources staffs in managing their cultural resources. These are individuals who are often trained by the agencies as assistants. They too could be directed towards site monitoring activities as part of this regional approach to preservation.

4. Resource Protection and Law Enforcement

Law enforcement has a lot on their hands these days and this is no less true on the public lands. Impacts to the land and the resources they contain are growing according to news accounts in recent years. This means that enforcing the laws protecting cultural resources from unauthorized disturbance is becoming more difficult as more demands are placed on the whole of the law enforcement system. Interagency cooperation would again provide an opportunity to inform law enforcement personnel about the nature and location of violations that are occurring so that a response may be possible. This would require coordination among cultural resources staff and law enforcement both within agencies and between agencies. The results would enhance long term resource protection by enhancing the enforcement of existing laws under circumstances where funding and manpower are limited and growing more scarce even as use of the public lands increases.

5. Communication and Interaction

The thrust of the argument presented so far in this section is that cooperation is in the best interest of all agencies with CRM programs. Limitations on time, money, staff and other critical resources behooves all to communicate and interact in such a way as to identify and effectively address problems common to all on a regional level. It is recommended that each agency commit staff from their CRM programs to participate in a cultural resources advisory board for southern Arizona. This advisory board would act as a clearing house for information on CRM issues of concern to all the agencies; but, also could act to alert the agencies to problems, such as reports of looting activity; develop policy recommendations for better management practices; seek funding through grants,

coordinate with law enforcement personnel on legal issues; work with the state to enhance the site Stewards program in critical areas; and develop regional CRM goals and priorities, among other things. The idea is to institutionalize cooperative interaction and communication among the agencies for the purpose of enabling better management of cultural resources on the public lands. Pulling together such a group and getting the necessary support has precedence in the Cultural and Historical Resources Technical Advisory Team of the Sonoran Desert Conservation Plan. Converting this group, which was formed to assist Pima County, into an organization to assist all members, would not require a new commitment on the part of many agencies, just a change to an existing one.

6. Planning for the Future

Cultural resource management, an outgrowth of the historic preservation movement, is now 30 years old in Pima County. In that time a set of legal mandates has evolved to meet a growing public demand that cultural resources be properly managed in the public interest. Staffing, funding, and facilities have grown with these mandates over time to varying degrees. Most programs are project driven in that they are designed to lessen impacts to cultural resources that may occur as a result of development in the public and private sectors. In some cases, however, public outreach and education has become an important part of what agencies do to inform the public and enlist their help in preserving the past. However, most if not all agencies have addressed their own CRM needs in isolation. Working across agency boundaries is not typical of most land managers, although there is precedence, especially among the larger federal land managers. They each have their own mandates that they interpret in their own way, and they each receive their own budgets and develop their own management priorities. That is not likely to change in the future; however, it is possible to plan for the future in a more interactive and cooperative manner. The recommendations presented in this section have laid out the advantages of doing so, advantages that would directly benefit Pima County and its ability to manage its cultural resources.

VII. Conclusion

Pima County has a wealth of cultural resource that taken together represent thousands of years of continual occupation by a wide variety of peoples whose histories have combined, and are still combining, to produce the county's current population mix. Rapid population growth in recent years, especially in the eastern half of the county, has consumed large parts of the desert and now threatens to consume what's left of this fragile landscape and the natural and cultural resources it contains. It for this reason that Pima County is preparing the Sonoran Desert Conservation Plan in order to find a balance between the twin needs of growth and conservation.

Research conducted for the Plan has revealed the existence of thousands of archaeological sites, on both public and private lands, and yet, these are only the ones for which there is some information. Similarly, dozens of historic resources and several places of traditional cultural value are known, but it is certain that these resources are significantly under counted. It is also clear that cultural use of the landscape in the past was regional in nature and that much more information is needed to understand the contextual relationship among these resources. However, those that are on the public lands are under the jurisdiction of 10 separate governmental entities subject to all of the vicissitudes in planning and management that implies. This assessment of cultural resource management in Pima County has demonstrated that what is known about cultural resources and how those resources are managed varies considerably from one agency to the next. Differences in agency history and mission orientation, are identified as the main reasons for this variability. While understandable, lack of consistency in CRM policy and practice has resulted in a patchwork of effectiveness across the landscape that contributes to, rather than curtails, resource loss on the regional level. That is because the nature of the management problem has become regional in scale while the focus of management practice is still largely on the individual agency level.

In comparing the management practices of the eight state and federal agencies and two local governments, it is clear that some CRM programs are purely reactive in that management is project driven and achieved only through compliance with legal requirements. Other agencies have developed a more holistic approach to resource management and have included pro-active efforts at resource identification, monitoring, restoration, public education, etc., to their CRM programs. Staffing levels appear to be the sole predictor of whether an agency is committed to meeting the minimal requirements of the law or something more public in orientation. Differences in land status, legal mandates, the degree to which cultural resources are included in planning, and the way land is used, and can be used, also effects whether cultural resources are protected and to what degree. Management is more direct on the public lands, while on private lands, whether cultural resources are protected and by how much varies by the degree of control local governments can exert over actions that may effect cultural resources.

Despite theses differences, many of the agencies studied in this assessment share common problems in meeting their respective responsibilities no matter what they might be. With few exceptions the agencies are understaffed limiting their ability to do anything more than what they are already doing. They also lack in critical baseline information on the resources they are supposed to manage. Survey

percentage show that some agencies have inventoried as less than 1% of their lands. This makes management virtually impossible because basic data on the location, character and condition are needed before effective decisions can be made. Survey, even sample survey, is desperately needed to locate and characterize what resources are on the ground. Predictive modeling may afford a valuable tool for management purposes but even models need to be tested on the ground to prove their effectiveness. While other agencies have more data by virtue of more survey having been performed, most have never come close to examining but a fraction of their land holdings, and then most of these areas are where some form of land development has been proposed. The result is a biased picture of the nature and distribution of cultural resources on the landscape making management all the more challenging.

Similarly, the agencies share in the kinds of impacts that are occurring to cultural resources. Impacts of human origin, direct, indirect, and cumulative, are affecting the public lands writ large. These impacts can take the form of low level but extensive effects from grazing to high level intensive impacts from mining. Intentional damage from looting and vandalism, and the non-intentional damage that occurs from recreational uses of the land are widely reported. And enforcement of existing laws on the public lands is limited because too few resources are having to go too far to protect the resource base.

It is precisely because of the shared nature of the problems discussed above, that the solutions recommended in this analysis involve a shift in both the theory and the practice of CRM in Pima County. Change in the status quo is needed, from management in isolation to inter-governmental cooperation on a regional scale. Developing a set of shared management priorities and objectives would make more effective use of limited resources and manpower and would enable cooperative ventures that achieve results that would benefit all. For instance, pooling resources to develop, test and refine a regional archaeological site probability model would enhance the planning and management capabilities of all 10 of the CRM programs included in this study. As recommended, a regional CRM planning group should be formed for the purpose of pooling resources and addressing common problems.

In developing a regional plan for growth management, Pima County has adopted a large scale view of problem solving that also applies to cultural resource management. The Sonoran Desert Conservation Plan calls for including much of the existing federal lands as core reserves and adding state and private lands where feasible through a variety of conservation programs and initiatives. What the plan looks like and how it will work have yet to be determined as of this writing. To make the plan effective as a tool for managing cultural resources under any scenario will require a commitment on the part of individual agencies to work together to solve problems on a regional level. This will require establishing the mechanisms needed to form and sustain an iterative process of gathering, interpreting, and communicating information among agencies so that greater knowledge can be gained and a more effective job of managing cultural resources in Pima County can be achieved.

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IX. Appendices

Appendix A Definitions

Archaeological sites - any material remains of past human life or activities preserved in their original setting, now an archaeological context, that are important to understanding prehistory or history. These sites or districts may include occupation sites, work areas, farming sites, burials and other funerary remains, artifacts, campsites, hearths, rock art, intaglios, trails, battle sites, religious or ceremonial sites, caves and rock shelters, the architectural or other remains of structures of all kinds, such as pit houses, pueblo rooms, adobe or rock foundations, and other domestic features, usually dating from prehistoric or aboriginal periods, or from historic periods at least 50 years old, for which only archaeological vestiges remain (Mayro and Cushman 1999).

Historical resources - sites, districts, structures, objects, or other evidences of human activities that represent facets of the history of the nation, state, or locality. Also places where significant historical or unusual events occurred even though no evidence of the event remains, or places associated with persons significant in our history that have gained importance in the last 50 years (Mayro and Cushman 1999).

Traditional cultural place - a historic site or district that is important because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. The traditional cultural significance of an historic property is derived from the role the property plays in a community's historically rooted beliefs, customs, and practices (NPS National Register Bulletin 38, 1990).

Appendix B Agency/Organizational Contacts

Mr. Jon Czaplicki, Archaeologist, Bureau of Reclamation, Phoenix, Arizona

Ms. Mary Farrell, Forest Archaeologist, Coronado National Forest, USDA Forest Service, Tucson, Arizona.

Ms. Cathy Johnson, Archaeologist, Arizona State Parks, Phoenix, Arizona.

Ms. Gwen Lisa, Natural and Cultural Resources Manager, US Air Force, Davis--Montan Air Force Base, Tucson, Arizona.

Mr. John Madsen, Curator of Archaeology, Arizona State Museum, Tucson, Arizona.

Ms. Linda Mayro, Cultural Resource Manager, Pima County, Tucson, Arizona.

Ms. Marty McCune, Historic Preservation Officer, City of Tucson, Arizona.

Mr. Jim McDonald, Land Use Planner, Coronado National Forest, USDA Forest Service, Tucson, Arizona.

Mr. Steven Ross, Archaeologist, Arizona State Land Department, Phoenix, Arizona.

Mr. David Seigel, Archaeologist, US Fish and Wildlife Service, Albuquerque, New Mexico.

Ms. Susan Wells, Archaeologist, Western Archaeology Conservation Center, National Park Service, Tucson, Arizona.

Mr. Max Witkind, Archaeologist, Tucson Field Office, Bureau of Land Management, Tucson, Arizona.

Appendix C. Conservation GAP Status definitions as presented in Recon 2000, page 9.

- Status 1a: An area that has permanent protection from conversion of natural cover and a mandated management plan to maintain a natural state within which disturbance events are allowed or mimicked through management.
- Status 1b: Same as 1a but may have uses that detract from the quality of the lands (e.g., visitor enters, high levels of traffic, heavily used trails, and campgrounds). Up to 5% of the land may be managed in an unnatural state.
- Status 2: An area that has permanent protection from conversion of natural cover and a mandated management plan in operation but receives uses of management practices that degrade the quality of existing natural communities, including suppression of natural disturbance. Over 5% of the land may be managed in an unnatural state.
- Status 3a: An area managed for biodiversity but not subject to permanent protection.
- Status 3b: An area having permanent protection from conversion of natural land cover for the majority of the area and subject to extractive uses of either broad, low intensity type (e.g., logging) or localized intensive type (e.g., mining, bombing, residential). It also confers protection to federally endangered and threatened species throughout the area.
- Status 4a: Unprotected private or public lands without existing land uses which limit the value for conservation.
- Status 4b: Unprotected private or public lands with no existing development, with allowed land uses that limit the value for conservation.
- Status 4c: Unprotected private or public lands with existing land use designations for increased intensity of land uses.
- Status 4d: Unprotected private or public lands with proposed or pending development projects.
- Status 4e: Tohono O'odham reservation lands.
- Status 4f: Developed lands.
- Status 4x: Unknown status.

Appendix D - Agency Personnel Interview Results

| <u>AGENCY</u> | <u>START DATE</u> | <u>ORIG. PURPOSE</u> | <u>PURPOSE CHANGED?</u> | <u>CRM STAFF IN P.C.</u> |
|---|--|--|---|--|
| BUREAU OF LAND MANAGEMENT (BLM) | early 1970s in Pima Co. (1992 Tucson field office) | preserve and protect cultural resources for conservation, scientific, public, and traditional uses | no | 2 -- one in Tucson, one in San Pedro River Natl. Conservation Area |
| US FOREST SERVICE (USFS) | late 1970s | compliance with NHP Act | yes - more proactive mngt.; focus on protection, stabilization and restoration of historic properties; public participation in volunteer projects, interpretive brochures/signs, archaeological symposia; addresses new laws, & consideration of properties w/ traditional values | 5 -- 2 full-time, 3 part-time |
| NATL. PARK SERVICE (NPS) | mid 1970s | protection, identification | yes - more education & inventory responsibilities | 1 in Pima County |
| US FISH & WILDLIFE SERVICE (USFWS) | late 1970s | comply minimally with NHP Act and other federal Legislation | no - still basic compliance | None - one staff person in Albuquerque, NM |
| BUREAU OF RECLAMATION (BOR) | 1970s | construction of Tucson CAP aqueduct | no | 2 in Pima Co. |
| USAF/DAVIS-MONTHAN AIR FORCE BASE (DMAFB) | 1989 | identify and develop a mngt plan on DMAFB to include historic facilities & archaeological sites | no | 1 natural and cultural resources coordinator |
| AZ STATE LAND DEPARTMENT (ASLD) | 1985 | comply w/ State Historic Preservation Act | no | none - 1 staff person in Phoenix |
| AZ STATE PARKS (ASP) | 1993 - 1st archaeologist | interface with SHPO | no - protect resources & consult with SHPO | none - 1 staff person in Phoenix |
| CITY OF TUCSON (COT) | 1972 --passing of historic district ordinance | protect neighborhoods from destruction (demolition of large portion of barrio & construction of TCC) | yes -- more proactive, includes regulation of City projects and some private development through rezoning process, Rio Nuevo now a responsibility (\$2mil archaeological and historical research project) | 2 full-time in Historic Preservation Office, 2 part-time in Planning Dept. |

| AGENCY | UNDERTAKINGS/ACTIONS IN PIMA COUNTY | # COMPLIANCE ACTIONS PER YEAR | PRO-ACTIVE COMPONENT |
|--------|---|--|---|
| BLM | planning activities involving Empire-Cienega National Cons. Area Res. Mngt. Plan, Baboquivari Wilderness Area, Mid. Gila Mngt Area; public mtgs; historic preservation project at Empire Ranch; construction of fiber-optic, nat. gas, electric, phone, & water lines, roads, and land exchanges; participation in investigations involving ARPA violations | in-house, about 10 per year; non-fed, 20-25; some involve large parcels of land where the numbers of sites might be numerous. | participation of volunteers in planning and preservation projects at the Empire Ranch House, interpretive brochures about the prehistory and history of the area, Arizona Site Steward program |
| USFS | compliance for projects like prescribed burns, road construction/reconstr., range allotment improvements, facility construction/improvements, hazardous material cleanup, land exchanges | 60-100 | yes - lots. For example: (1) the USFS works with the Az Site Stewards program to patrol and protect sites; (2) we hold at least one "Passport in Time" project each year, in which volunteers from all over the country come work on the Forest's heritage resources (past examples involving sites in Pima County include recording historic recreation features at Sabino Canyon, doing adobe building stabilization and restoration work at Kentucky Camp, recording prehistoric and historic sites in the Santa Rita Mountains); (3) we work with volunteer groups and the University of Arizona architecture department to restore other historic structures (e.g. Coronado Camp, Lowell Ranger Station); (4) we survey areas and inventory sites not related to project compliance; (5) we nominate significant properties to the National Register of Historic Places; (6) we provide public interpretation of the prehistory and history of the forest, e.g. at Sabino Canyon Visitor Center, or in interpretive signs along the Mt. Lemmon Highway, or along the Arizona Trail; (7) we work with adobe & |
| NPS | inventory and compliance | 5 to 10 | meeting with SHPO |
| USFWS | habitat development, habitat restoration, habitat engineering projects, land exchanges, historic bldg. Demolitions | 12 to 15 | compliance with the law |
| BOR | assessments, surveys | 1 to 2 | no |
| DMAFB | alterations and additions to historic buildings; demolition | 0 - 5 | not really; based on the identified facilities/sites -- strictly a "mngt" program |
| ASLD | rights-of-ways (utilities, roads, transmission lines, sewer lines); flood control projects, land sales, commercial leases | 300+ | no |
| ASP | check for cultural/historic resources before ground disturbance (or painting/restoration), try to make compatible w/orig.. watch landscape for viewshed impacts | 20 | preserve, stabilize, protect, interpret |
| COT | all City-sponsored projects are reviewed for cultural res. compliance, federally funded projects are reviewed, rezoning actions are reviewed, and construction activity in 5 local historical districts are reviewed | design review=90 cases, environmental clearance for federal affordable housing and social service projects=60, cultural resources clearances on city and federally funded project =30, rezoning requests=50, real estate transactions=45 | applying for and assisting others applying for grants, grant for exterior rehab of historic homes, public speaking, training for Historic Commission and Historic Zone Advisory Boards, course for realtors, training for City staff |

| <u>AGENCY</u> | <u>LEGAL AUTHORITIES</u> | <u>INTERNAL POLICIES & WHAT THEY CONTROL</u> | <u>CRM MNGT. PLAN & DATE WRITTEN</u> | <u>SEP. PLANS FOR EACH AREA IN Pima Co?</u> |
|---------------|---|---|--|--|
| BLM | Antiq Act, Archaeology and Historic Pres Act, NHPA, Natl. Env Policy Act, Fed Land Policy and Mngt Act, NAGPRA, AIRFA, 36 CFR part 800, 7, 60, 66, 79, 43 CFR part 10, Adv Council on Hist Pres: Natl Register Bulletin 15, 38, 16, Secy of Int Standards | Manual 8100 series, BLM statewide Programmatic Agreement with SHPO and ACHP controls all aspects of CRM in the BLM's Tucson Field Area | currently no CRM plan for Tucson Field Area -- CRM plan in progress for Las Cienegas, Ironwood, and other geog. Areas w/ Tucson Field Area | no plans currently |
| USFS | NHPA, NEPA, NFMA, NAGPRA, AIRFA, Antiquities Act 1906, Historic Sites Act 1935, Arch. & Hist. Pres. Act 1974, Arch. Res. Protection Act 1979, Exec. Orders 12898/13175/13007 | 1) F.S. Manual sections; 2) region-wide (AZ&NM) Programmatic Agreement w/SHPO; 3) Memorandum of Understanding w/Hopi Tribe (working on MOUs w/ other tribes w/traditional ties to the Forest); 4) direction from Regional Office & Natl. Office | yes - original plan: 1986, plan amendment 1992 (the plan will be updated in the next few years) | For the Santa Catalina, Nogales, & Sierra Vista districts follows Forest Plan. Within 4 yrs. there will be more specific mngt. direction for parts of the forest w/in P.C. |
| NPS | NHPA, ARPA, Antiq. Act | yes - Programmatic Agreement on no effect clearance w/SHPO; Secretary of Interior Standards; Parks Service (control all of CRM program). | yes - general mngt. plans for Organ Pipe and Saguaro (resource mngt. plan w/ drafts - not final) | yes - 1 for each Park |
| USFWS | NHPA, ARPA, NAGPRA, AIRFA, Executive Order 13007 | yes - USFWS Service Manual: 614 (chapter in manual on CRM mngt.) *avail. on net; controls all of CRM program | no mngt. plan | n/a (no plan) |
| BOR | NHPA, ARPA, Exec. Order 11593, NAGPRA, CAP Act of 1968 | yes - mimic Secretary of Interior Standards (control all of CRM) | yes - written for CAP in 1983 | just CAP |
| DMAFB | DOD, USAF, all fed laws/acts governing historic preservation, antiquities, and natl environ. protection | Air Force Instr. 32-7065, cultural resources mngt. (mostly coordination guidelines) -- control all aspects of the program | yes -- 1995 (currently under regularly scheduled revision) | not applicable |
| ASLD | State Hist Pres Act, State Burial Protection Act, State Antiquities Act | no | no | n/a |
| ASP | Az. Antiq. Act, State Hist. Pres. Act, Nalopma; ist. Preservation Act, NAGPRA, Secretary of Interior Standards | yes - Internal policies guide case-by-case review; consultation with SHPO on effect, and discovery of human remains. | yes - 1 for each Park; 1998 approved by Parks Board | n/a (no areas in P.C.) |
| COT | Natl. Hist. Pres. Act, State Hist. Pres. Act, AZ Antiq. Act, State burial laws, COT Resolutions 12243 and 16548 | yes -- Administrative Directive (covers cultural resource assessment and compliance for City-sponsored projects, federal funded projects and leased properties), on-call cultural resources contractor (reviews city projects and conducts archaeological and historic compliance activities) | no (Comprehensive Plan includes a number of policies which address cultural resource issues) | no CRM mngt. plan, only Comprehensive Plan |

| <u>AGENCY</u> | <u>CURRENT NEEDS AND PRIORITIES</u> | <u>MANAGEMENT GOALS FOR THE FUTURE</u> | <u>BIGGEST PROBLEM/BIGGEST ACHIEVEMENT</u> |
|---------------|---|---|--|
| BLM | cultural resources inventories throughout the Tucson Field Area, esp. the Ironwood Forest Natl Monument | conserve, preserve, interpret, allow some scientific investigation | lack of funding, lack of workforce (archaeologists) |
| USFS | Coronado NF: improving communication and coordination w/tribes; continuing participation in the AZ Site Steward program; continuing coordination of volunteer efforts to preserve and restore hist. Sites (especially Kentucky Camp and Lowell Ranger Station) | see current needs and priorities; additional site inventory, evaluation, and protection; additional public interpretation, esp. for some under-represented themes (e.g. Native American use of the forest; Japanese Americans at the Catalina Highway prison) | meeting the needs and desires of a public increasing in number & diversity, w/ dramatically decreasing funds for federal programs |
| NPS | Saguaro: cultural landscape nomination fr CCC picnic areas & dev. In cooperation with Pima Co.; Organ Pipe: developed area survey; Section 110 inventory throughout Park | compliance and inventory | problem: theft and vandalism at border sites; achievement: 30% Park survey (Saguaro); modern sample survey active program w/ stabilization (Organ Pipe) |
| USFWS | ongoing compliance | continuing legal compliance | problem: cost of compliance greater than project itself; achievement: maintaining good relations with tribal governments |
| BOR | to assist County and other agencies/groups with water needs and maintaining CAP | complete CAP database for site locations; resource mgnt. plans for each reach of CAP | problem: lack of funding; achievement: archaeological and public outreach done on CAP |
| DMAFB | not applicable | to ensure that any future development on base is undertaken w/ proper coordination w/ any historic preservation laws | problem: contractors fail to comply with new construction/remodeling of existing facilities; achieve: identifying archaeological history of the base and recreating artifacts that depict the activity |
| ASLD | additional staff | work w/ Site Stewards for sites on state trust lands; continued compliance; implement a new para professional program to assist w/ CRM program | problem: coordinating consultation w/ fed agencies when they're involved because of the extra time it takes; applicants don't like to pay for arch studies; no funding for CRM program, so costs are passed to applicant |
| ASP | each Park surveyed for archaeology; bring historic buildings up to code (while maintaining hist. status) | stable, preserved buildings; each Park surveyed for archaeology | problem: \$, time; achievement: brought together records of archaeology in Parks |
| COT | provide info about historic preservation to the public, work w/ neighborhoods desiring historic designation, write and administer grants to support preservation projects and activities, develop a website for the office, develop programmatic agreements for federally funded activities, assist in the dev of the Rio Nuevo project, oversee compliance w/ pres regulations for City projects | more training for City staff and historic zone advisory boards, better oversight of the City's on-call cult. res. contract, more/better materials info for the public on cultural resources issues (being addressed through improved website) | achievement: growth and development of the historic preservation program in the COT (now have a second employee and activities can expand further) |

| <u>AGENCY</u> | <u>BIGGEST THREAT TO CULTURAL RESOURCES</u> | <u>MAINTAIN OWN SITE RECORDS?</u> | <u>OBTAIN NUMBERS FROM ASM?</u> | <u>RELY ON AZSITE DATABASE?</u> | <u>INTERGOVERN. AGREEMENTS FOR CRM?</u> | <u>SITE STEWARDS PROGRAM? # SITES MONITORED</u> | <u>COPIES OF CRM MNGT. PLANS?</u> |
|---------------|--|---|--|---|---|---|--|
| BLM | explosive population growth of Pima Co. | yes | yes -- use only ASM numbers | yes | no | yes (# not known) | none currently |
| USFS | natural erosion and weathering; vandalism (intentional and unintentional) | yes | not on a regular basis (maybe when system is integrated w/AZSITE) | no, but trying to integrate system w/ AZSITE system | often cooperate with other land managing agencies for review of projects (like fiber optics cables) | about 100 | Pima Co has one |
| NPS | Seguaro NP: urban encroachment; Organ Pipe NM: border issues | yes | yes | no | no | yes, both Parks; less than 10/Park | plans are old, gen. mngt. plans in revision |
| USFWS | no major problems | no - nothing exclusively theirs (all duplicate ASM) | yes | yes | no | 1 site steward, unknown # sites (approx. 6 sites) | no - they have no CRM plans |
| BOR | vandalism, maybe | yes -- project-by-project basis | yes (until they began no, but do look at it no (not in Pima Co.) charging) | no | no (not in Pima Co.) | yes, but not in Pima County | 1983 version - deals w/cult. resources during time of construction |
| DMAFB | facilities being demolished before they can be identified and documented for historic purposes due to contractors not following procedures | records kept at ASM -- all sites have ASM numbers | yes | unsure (the contractor who did arch survey entered numbers into AZSITE) | no | no -- | yes, upon request |
| ASLD | land use related destruction of cultural resources | yes -- ASLD is building its own CRM database | yes | no -- don't want to pay ASM to use data (only interested in ASLD land) | yes -- ASLD agreement w/SHPO (unknown # sites monitored) | no -- | no |
| APS | buildings overused | yes | yes (by law) | not yet | yes (mostly for archaeological survey) | yes, few sites monitored | yes, 1 for each Park (40-50 pg. each) |
| COT | development | no | yes | no | probably not | no | (Comprehensive Plan policies avail) |

