

Forest Plan Revision DEIS

Heritage Resources Specialist Report

FINAL

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Preface

The information in this specialist report reflects analysis that was completed prior to and in conjunction with the completion of the Draft Environmental Impact Statement (DEIS) for the revision of the 1987 Coconino National Forest Land Management Plan (the Plan). The primary purpose of specialist reports associated with the DEIS is to provide detailed information to assist in the preparation of the DEIS. As the DEIS was prepared, review-driven edits to the broader DEIS resulted in modifications to some of the information contained in some of the specialist reports. As a result, some reports no longer contain information and analysis that was updated through an interdisciplinary review process and is included in the DEIS in its entirety. This is a complete specialist report which includes all the information that was summarized in the DEIS and other supplemental information. Efforts have been made to ensure that the retained information in the specialist reports is consistent with the DEIS. If inconsistencies exist between specialist reports and the DEIS, the DEIS should be regarded as the most current, accurate source of analysis.

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Introduction

Relevant Laws, Regulations, and Policy that Apply

Laws

Laws protecting archaeological sites were initially passed near the turn of the 19th Century, as part of a wave of interest in the new addition to the United States – the Western Territories. As the territory was settled, the land began to be utilized not only by individuals and families who settled the area, but by the “robber barons” – men who became wealthy magnates by exploiting the west’s abundant minerals, lumber, agricultural, and ranching resources. Archaeological sites such as Mesa Verde, Chaco Canyon, Casa Grande, and Pecos Pueblo, along with many other sites, were being dug in by individuals for personal collections and to obtain artifacts to sell, causing considerable damage to archaeological sites. The eastern establishment became concerned about what they felt was reckless destruction of the environment, and there was an outcry to provide protection for the region, including its archaeological sites. The result was the formation of a number of federal agencies and laws designed to properly manage the western lands and its resources.

The **Organic Act of 1897 (Title 16, United States Code (USC), Section 473-478, 479-482, 551)** is the original organic act governing the administration of National Forest System (NFS) lands. It gives the Secretary of Agriculture the authority to make regulations and establish services necessary to regulate the occupancy and use of NFS lands and preserve them from destruction. Persons violating the act or its regulations are subject to fines or imprisonment. This is one authority used to issue permits for archaeological investigations.

The **Antiquities Act of 1906 (16 USC 431)** was the first significant federal effort to protect archaeological sites. It form the basis for all subsequent legislation designed for the protection of archaeological sites and artifacts. It makes it a crime for anyone to excavate or damage archaeological sites on federal land or to collect artifacts from them without a permit from the pertinent federal land managing agency. Violators could be fined \$500 and/or imprisoned for 90 days. Its **Uniform Rules and Regulations** provides the details for issuing permits to scientific or educational institutions and requires artifacts from federal land to be placed under the care of a public museum. Most important for future generations, it also gives the President the authority to create national monuments by Executive Order. It was the legal basis for virtually all archaeological violations on federal lands until 1974, when it was determined unconstitutionally vague and could no longer be used for prosecutions in the Fifth, Northern District of the Sixth, and the Ninth Circuit Court Districts, which includes Arizona.

As one way to move the country out of the Great Depression, the federal government developed many federal programs to create jobs and stimulate the economy. It provided several pieces of legislation to ensure archaeological sites were considered ahead of project development and to provide funding for their excavation in advance of destruction by federal projects. It also recognized the national importance of heritage resources to the nation.

The **Historic Sites Act of 1935 (16 USC 41)** declares it is a national policy to use and preserve historic sites, buildings, and objects for the inspiration and benefit of the people of the United States. It provides for a survey and inventory of important historic and prehistoric sites. It

authorizes a National Historic Landmark Program within the National Park Service and provides the highest level of protection available to prehistoric and historic archaeological sites.

Public attitudes in the 1960's and 1970's were similar to those at the turn of the 20th century and a concern for the preservation and protection of prehistoric and historic sites

The **Reservoir Salvage Act of 1960 (Public Law 86-253; 49 Stat. 666)** was intended to extend the purposes of the **Historic Sites Act** to archaeological remains that would be lost or destroyed by construction of federally related dams greater than 5000 acre feet or 40 surface acres. It only authorized the expenditure of federally related funding for the excavation of endangered archaeological sites. Authorization to expend federal funds for artifact analysis, reporting, and preparation of reports was not authorized until passage of the **Archeological and Historic Preservation Act** in 1974.

The **National Historic Preservation Act of 1966 (NHPA) (16 USC 470)**, as amended, is the most significant piece of legislation in the United States regarding the preservation and conservation of archaeological sites. It extends the policy of the Historic Sites Act to sites of state and local significance as well as those of national significance. It expands upon the national inventory of the Historic Sites Act into the National Register of Historic Places. It establishes the Advisory Council on Historic Preservation and a system of State Historic Preservation Officers, which provides a level of review for all federally-related projects. Its two most important sections that relate to management activities of federal agencies are Sections 106 and 110. **Section 106** requires all federal agencies to take into account the effects of their activities on properties included in or eligible for the National Register. In addition to protecting sites from land managing activities, **Section 110** requires agencies to develop programs and activities to enhance and interpret heritage resources and to provide opportunities for the public to take part in archaeological activities. When the law was amended, it subsumed **Executive Order 11593, Protection and Enhancement of the Cultural Environment of May 13, 1971**, which directed federal land managing agencies to inventory lands under their authority, nominate appropriate historic properties to the National Register of Historic Places, and to protect sites from damage until their Register eligibility can be determined. With its amendments in 1992, federal agencies must consider the National Register eligibility of traditional cultural properties (TCP). Those amendments also give federal agencies the authority to withhold information from the public about the location, character, or ownership of sites and TCP's if the agency determines that disclosure may cause a significant invasion of privacy, risk harm to the historic resource, or impede the use of a traditional religious site by practitioners.

The **National Environmental Policy Act of 1969 (NEPA) (42 USC 4321-4346)** establishes national policy for the protection and enhancement of the environment – which has been interpreted as including the cultural environment as well as the natural environment. As part of this, the federal government is to “preserve important historic, cultural, and natural aspects of our national heritage.” This act is implemented by the **Council on Environmental Quality (CEQ) according to (40 CFR 1500-1508)**.

The **Archeological and Historic Preservation Act of 1974 (16 USC 469)**, also known as the **Archeological Recovery Act** amends and expands the Reservoir Salvage Act to include all federal, federally assisted, and federally licensed construction projects. It explicitly requires all federal agencies to conduct archaeological surveys in advance of any projects that might result in the destruction of significant archaeological remains. Besides providing agencies with the stated authority to conduct such investigations, it also gives them the authority to provide funding from project costs for the analysis and reporting of the results of surveys and excavations, and for proper care and curation of artifacts.

The **Federal Land Policy and Management Act of 1976 (43 USC 1701)** directs the Forest Service to manage National Forest System (NFS) lands for multiple uses in ways that will protect the quality of cultural resources and archaeological values. It provides for periodic inventory of public lands and resources, comprehensive land use planning, and permits to regulate use of public lands. It directs agencies to manage all cultural resources on public lands through the land management planning process.

The **American Indian Religious Freedom Act of 1978, as amended (42 USC 4321-4347)** states that it is federal policy to protect and preserve for American Indians, Eskimos, Aleuts, and Native Hawaiians their inherent right of freedom to believe, express, and exercise their traditional religions. This includes access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. Federal agencies are to evaluate their policies and procedures in consultation with native traditional religious leaders to determine any changes needed to protect and preserve Native American religious cultural rights and practices.

The **Archaeological Resources Protection Act of 1979 (ARPA) (16 USC 470aa *et seq.*, as amended)** was created to provide more stringent penalties for archaeological crimes than the maximum \$500 fine and/or 90 days imprisonment provided by the Antiquities Act and to provide an alternative for prosecution under the Antiquities Act, which could not be used in the Fifth, Northern District of the Sixth, and the Ninth Circuit Court Districts. It provides for both misdemeanor and felony penalties as well as civil penalties for attempted or actual unauthorized excavation, removal, or damage to any “archaeological resource” on federal lands that is more than 100 years old. It also prohibits the sale, purchase, exchange, transportation, receipt, or offering of any “archaeological resource” obtained from public or Indian lands in violation of any federal, state, or local provision, rule, regulation, permit, or law. It provides a permit system for removal or excavation of archaeological materials from federal and Indian lands. Unlike the Antiquities Act, which only authorizes permits to institutions, ARPA also provides for the issuance of permits to qualified individuals. As with **Section 110 of the National Historic Preservation Act**, it directs agencies to conduct archaeological surveys on land under their authority and to create public awareness programs about archaeological resources.

The **Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (25 USC 3001)** has had a phenomenal impact on archaeology, museums, and archaeologist-Native American in the United States. It provides a process for museums and federal agencies to return human remains, funerary artifacts, and objects of cultural patrimony to lineal descendants and culturally affiliated Indian tribes and other Native American groups. Federal agencies must determine a “cultural affiliation” for the prehistoric remains that occur on lands they administer and to work with those appropriate groups for the repatriation of human remains and objects. It also requires consultation and involvement with culturally affiliated groups in the planning, excavation, and analysis of archaeological sites. It also has penalties for noncompliance with the law and illegal trafficking of artifacts and objects of cultural patrimony.

National Register Bulletin 38: Guidelines for Evaluating and Documenting Traditional Cultural Properties (Parker and King 1990) provided guidance for considering places that are significant for their “role in a community’s historically rooted beliefs, customs, and practices” as “historic properties” and, as such, are eligible for consideration for the **National Register of Historic Places**. Accordingly, such places are afforded the same level of protection from federal actions as archaeological sites under Section 106 of the **National Historic Preservation Act**. Although originally issued as guidelines, the provisions of Bulletin 38 were incorporated into the **National Historic Preservation Act** when it was amended in 1992.

The **Federal Lands Recreation Enhancement Act of December 8, 2004 (16 USC 6801-6814)** allows federal agencies to charge fees at recreation facilities, such as archaeological site developments, that provide a certain level of visitor services. It also permits fees for recreation activities that require exceptional visitor safety measures or for protection of natural and cultural resources.

Other Acts, such as the **Multiple-Use Sustained-Yield Act of 1960 (16 USC 528-531)** and the **Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) (17 USC 1600-1674)** authorize national forest management direction and, as such, may affect Heritage Program activities.

Executive Orders

Executive Order 13007 – Indian Sacred Sites of May 24, 1996 directs federal land management agencies to accommodate access and use of Indian sacred sites, provide for the physical integrity of such places, and maintain the confidentiality about them. Agencies must also establish a process to ensure affected Indian tribes are given reasonable notice of proposed actions or policies that may affect sacred sites.

Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments of November 6, 2000 require federal agencies to establish regular and meaningful government-to-government consultation and collaboration in the development of policies that have tribal implications. It also directs agencies to reduce the imposition of unfunded mandates upon Indian tribes.

Executive Order 13287 – Preserve America, of March 3, 2003 reaffirms federal policies to provide leadership in preserving America’s heritage by actively advancing the protection, enhancement, and use of historic properties owned by the federal government. It defines “federal real property” as any real property owned, leased, or otherwise managed by the federal government, both within and outside the U.S., and improvements on federal lands. It encourages the development of partnerships with tribal, state, and local governments and the private sector to make more efficient and informed use of historic properties for economic development and public benefits. Agencies are also required to review and report on their policies and procedures for compliance with the **National Historic Preservation Act, Sections 110 and 111**.

Executive Order 13327 – Federal Real Property Asset Management of February 4, 2004 establishes the Federal Real Property Council to develop guidance for each agency’s asset management plan. The Senior Real Property Officer of each agency is required to develop and implement an agency asset management planning process that incorporates the requirements of E.O. 13287.

Executive Memo, Tribal Consultation, November 5, 2009 directs agencies to submit a detailed plan of action to the Director of the Office of Management and Budget on how the agency will implement the policies of **Executive Order 13175**. Annual progress reports on the status of each action and any proposed updates to the plan are also required.

Regulations and Federal Guidelines

Code of Federal Regulations (261.9, USDA Forest Service – Property): Prohibits digging, excavating, disturbing, injuring, or destroying any archaeological, paleontological, or historical site, or removing, disturbing, injuring, or destroying an archaeological, paleontological, or historical object.

Theft of Government Property (18 USC 641): The Antiquities Act of 1906 identifies artifacts from archaeological sites as federal property, and therefore this statute can also be used to prosecute people who remove artifacts from federal lands.

Destruction of Government Property (18 USC 1861): The Antiquities Act of 1906 identifies artifacts from archaeological sites as federal property, and this statute has been very successfully used in lieu of other provisions that are more specifically focused on heritage resources.

Protection of Historic Properties (36 CFR part 800) provides guidelines for complying with the **National Historic Preservation Act Section 106** requirements on how federal agencies take into account the effects of their undertakings on historic properties. It requires federal decisions to be made in consultation with State Historic Preservation Officers, Indian Tribes, local governments, other consulting parties, and, as needed, the Advisory Council on Historic Preservation, which issued these regulations and oversees agency compliance with **NHPA Section 106**. The goal of such consultations is to identify historic properties that may be affected by federal undertakings, assess these effects, and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.

National Register of Historic Places (36 CFR Part 60) establishes criteria for evaluating the significance of historic properties and the use of the National Register to determine which historic properties should be protected from impacts caused by federally-related activities.

Protection of Archaeological Resources Uniform Regulations (36 CFR part 296) establishes uniform definitions, standards, and procedures for federal land managers to comply with the requirements of **ARPA** and the issuance of **ARPA** permits.

The **Native American Graves Protection and Repatriation Regulations (43 CFR part 10, Subpart B- Human Remains, Funerary Objects, Sacred Objects, or objects of Cultural Patrimony from Federal or Tribal lands)** gives directions for federal land managers to comply with **NAGPRA** requirements.

The **Curation of Federally-owned and Administered Archaeological Collections (36 CFR part 79)** sets definitions, standards, procedures, and guidelines for federal agencies to curate collections of prehistoric and historic materials and associated records.

Statement of Federal Financial Accounting Standards 29, Heritage Assets and Stewardship Land, July 7, 2005. The Federal Accounting Standards Advisory Board changes information for heritage assets and stewardship land as “basic” except for condition information, which is reclassified as required supplementary information. This standard requires additional reporting about stewardship policies and an explanation of how heritage assets and stewardship land relate to the mission of the agency.

USFS Manual and Handbooks

The **Forest Service Manual (FSM) Chapter 2360-Heritage Program Management** provides national direction and policies for the entire USDA National Forest Service. Recently revised in 2008, it covers such areas as program objectives, policies, responsibilities at various levels of the organization, elements of the Heritage Program, relationships with other agencies and organizations, qualifications, consultation procedures, and management systems for collections and information.

The **Forest Service Manual (FSM) Chapter 2720 – Permits** pertains to the many different types of permits issued by the Forest Service, but includes specific information for policies,

requirements, forms, and procedures used in evaluating and issuing permits for archaeological surveys and excavations under several different authorizations.

The **Forest Service Manual (FSM) Chapter 1560 – State, Tribal, County, and Local Agencies: Public and Private Organizations, Interim Directive No. 1560-2009** provides policy, responsibilities, and directions for complying with various laws and regulations pertaining to Tribal relations, the **Native American Graves Protection and Repatriation Act**, in particular.

The **Forest Service Manual Supplement, Southwestern Region, Chapter 2360 – Special Interest Areas** explains in greater detail how the elements identified in the **FSM** are applied in the Southwest Region (Region 3) of the U.S. Forest Service. The current FSM Supplement was finalized in 1999 and is currently under revision.

The **Forest Service Manual Supplement, Southwestern Region, Chapter 2720 – Permits** provides information that is specific for permit issuance in the Southwestern Region of the U.S. Forest Service.

The **Forest Service Handbook, Region-3, Chapter 40 – Damage Assessment** provides policy, responsibility, and procedures for dealing with damage to archaeological sites due to various activities, such as timber harvesting, mining, and archaeological criminal acts. It explains how to determine value and cost determinations, damage reports, and procedures for collecting fines.

The **Forest Service Handbook, Chapter 1509.13 – American Indian and Alaska Native Relations Handbook** provides guidance and direction for tribal consultation, repatriation and reburial documentation, voluntary closures, and tribal compensation as it relates to consultation and NAGPRA.

The **USDA Tribal Consultation Action Plan** was developed in response to President Obama's Memorandum on Tribal Consultation of November 5, 2009 to all Departments to develop a tribal consultation plan that will provide effective tribal consultation and collaboration in performing each Department's roles and responsibilities.

The **Food, Conservation, and Energy Act of 2008, HR 6124 (The Farm Bill), Subtitle B-Cultural and Heritage Cooperation Authority** deals with Heritage Program functions and Indian tribes, particularly as they relate to **NAGPRA**. It provides authority for the reburial of human remains and cultural items on NFS lands, to withhold information regarding reburials and information that is culturally sensitive to Indian tribes, to ensure access of NFS land to Indians for traditional and cultural purposes, provides forest products to tribes for traditional and cultural purposes without a fee, and the strengthen federal support for the protection and preservation of traditional, cultural, and ceremonial practices by Indian tribes.

The **First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities Among New Mexico Historic Preservation Officer and Arizona State Historic Preservation Officer and Texas State Historic Preservation Officer and Oklahoma State Historic Preservation Officer and the Advisory Council on Historic Preservation and the United States Department of Agriculture-Forest Service Region 3 of December 24, 2003 ("the R-3 MOA")** summarizes the conditions and procedures by which the 11 National Forests of the Southwestern Region, the State Historic Preservation Officers (SHPO) of four, and the Advisory Council on Historic Preservation agree to consult and implement 36 CFR 800, the regulations implementing Section 106 of the NHPA. It provides greater latitude and simplified procedures for the Forests to operate their cultural resource management programs by defining what types of undertakings are and are not subject to formal review and consultation, establishes certain types of activities that are exempt from consultation, and identifies specific types of

historic properties that are considered eligible for the National Register. It includes a number of appendices that more specifically deal with certain types of recurrent undertakings, such as bark beetle infestation projects; noxious weeds management; large scale fuels reduction; range land management vegetation treatment, and habitat improvement projects; and travel management.

The Memorandum of Understanding between the United States Department of Agriculture, Forest Service, Coconino National Forest and The Hopi Tribe, January 9, 2003 establishes the formal relationship between the Forest and the Hopi Tribe. It specifically deals with procedures by which the Forest will consult with the Hopi Tribe on proposed projects and the National Register eligibility of archaeological sites, ARPA permit reviews, and NAGPRA issues. The Forest agrees to provide access to the Forest and Forest resources for cultural and ceremonial purposes, maintain confidentiality of records pertaining to Hopi and their uses of the Forest, and other areas of mutual interest.

Tribal Consultation

Notifications and consultations about the Forest Plan Revision have been conducted with the 22 American Indian groups which the Forest routinely consults about Forest activities. These include the Pueblo of Acoma, Havasupai Tribe, Fort McDowell Yavapai Nation, Hopi Tribe, Navajo Nation, Walapai Tribe, Tonto Apache Tribe, San Carlos Apache Tribe, San Juan Southern Paiute, White Mountain Apache Tribe, Yavapai-Apache Nation, Yavapai-Prescott Tribe, the Pueblo of Zuni, the Dine' Medicine Man's Association, Navajo Forestry Department, and the Bodaway-Gap, Cameron, Dilcon, Leupp, Tolani Lake, Coppermine, and Tuba City Chapters of the Navajo Nation (Appendix 1).

During the scoping and consultation process, the tribes raised a number of issues and concerns. These include increasing development of the Forest, access to ceremonial and collecting areas, permits for collecting forest products, fuelwood needs, management of springs and waterways, communications with the tribes, a need for collaborative working relationship, potential toxicity of plants used for basketry by roadside spraying of herbicides, and uses and developments on the San Francisco Peaks, most notably the Arizona Snowbowl.

Methodology and Analysis Process

Assumptions

The past 50 years of increased growth is considered to be a marked pattern for Yavapai and Coconino Counties, in which the Forest is located. Over the past 20 years, Yavapai County has been the fastest growing area in Arizona, maintaining a growth rate of over 50 percent and the population of Flagstaff has increased 40 percent. The Camp Verde and Prescott areas between 1980 and 1990 in particular grew at rates of 454 and 287 percent respectively. These dramatic population surges have changed the composition of the county. In 1980, the majority of people in Yavapai County lived in rural areas (55 percent), but by 2000, with a 20 percent increase in urban population, this relationship has reversed, significantly altering the social, residential, and economic characteristics of the county and the audience served by the Forest (See Socioeconomic Specialist Report for more information).

Within the exterior boundary of the Coconino National Forest, site information has been recorded for approximately 10,000 archaeological sites. This includes approximately 787 "Legacy Sites" – early sites reported prior to 1960 by the Museum of Northern Arizona that have not yet been relocated and re-recorded to current standards; 291 sites on National Park Service land, mostly Walnut Canyon National Monument; 130 sites on private land, 51 sites on county or municipal

lands, and approximately 8,741 sites recorded since 1975, when the Heritage Program of the Forest was established.

All sites with confirmed locations are plotted on the Forest's GIS map layers with supporting information in a GeoDatabase. An Archaeological Site Log spreadsheet has records for approximately 6,500 sites and 9,240 sites are presently entered into INFRA (as of Dec. 7, 2010). There are a number of information systems that today comprise the Archaeological Site Survey of the Coconino National Forest. Various types of computerized information for roughly 6,000 to 9,000 sites is available and is sufficient to characterize and make reliable conclusions about the nature and condition of archaeological sites on the Coconino National Forest.

Archaeological Site Density

In order to evaluate the archaeological sensitivity of different parts of the Forest, a simple model was developed that predicts the potential number of sites per square mile within different environmental situations as reflected by the 134 soil/moisture/vegetation units defined by the Terrestrial Ecosystem Soil Survey (TES) for the Forest. The Terrestrial Ecosystem concept was developed by the U.S. Forest Service to characterize the various environmental areas of the forest by considering a number of environmental variables such as geological substrate, slope, aspect, existing vegetation, historical vegetation, moisture, and soil type. All of these variables have been found to be important when considering the relationships between the environment and prehistoric land use patterns.

For purposes of evaluating the potential effects of projects and activities, **site sensitivity** is defined as the potential site density of the area that could theoretically be impacted by various actions. The potential site density for each of the 134 TES units is determined by dividing the number of sites recorded within each TES unit by the total acres that archaeologists have physically examined within each TES unit. This provides an estimate of the number of sites per acre which, when multiplied by 640 (the number of acres within a square mile), provides the estimated number of sites per square mile within each of the TES units. The estimated site density for each TES unit was plotted as a histogram, ranging from low to high, and by identifying natural breaks in the histogram, five site density classes were defined (table 1), which have been used to produce an overall site density map for the Forest (figure 1).

Ratings of simple site density were modified into areas of **cultural sensitivity** for areas that are known to be of traditional cultural importance to modern Southwestern Indian tribes. The degree to which the site sensitivity was upgraded for cultural sensitivity is based upon the relative traditional importance of an area, as understood by the Forest Heritage Resources staff. Hence, the San Francisco Peaks, with their major religious and cultural significance to many tribes, are ranked as extremely high in cultural sensitivity, while the pinyon-juniper country east of Winona, an important fuelwood and pinyon nut gathering area for nearby Navajo chapters, is rated as much lower in cultural sensitivity.

Table 1. Archaeological site density classes defined for the Coconino National Forest

Cultural Sensitivity and Archaeological Site Density		
Cultural sensitivity	Figure 1 and table 1 color code	Estimated site density
Very low	dark blue	0 sites per square mile
Low	light blue	1—10 sites per square mile
Moderate	green	11—20 sites per square mile
High	brown	21—30 sites per square mile
Very high	red	30 or more sites per square mile

In general, very low to low density areas correspond with the high ponderosa pine forest above the Mogollon Rim. The ponderosa zone on the east side of the San Francisco Peaks, northeast of Flagstaff, however, is a high site density area. High to very high density areas occur in the pinyon-juniper zone, particularly in the Verde Valley, along the base of Anderson Mesa, east of Flagstaff, and north of the cinder belt.

Issues Addressed in this Analysis

A number of issues or concerns were expressed during consultation meetings with various tribes during the scoping process for Forest Plan revision concerning Heritage Resources (See Appendix 1). Tribal concerns involved access to areas to perform ceremonies and collect plants, firewood, and other forest products for traditional cultural purposes. Tribes appreciated the “shared stewardship” philosophy the Forest used in the past for project consultations and management activities. However, since the recent Snowbowl development decision, numerous statements were made that the Forest has no credibility with the tribes and they lack faith in the Forest’s stated desire to support tribal needs and values. Many feel their trust in the Forest has been broken because of it. Tribes want more transparency in knowing how their input is used in the Forest’s decision-making process and want greater involvement of Forest staff and line officers in face-to-face consultations. Some complaints were made about inconsistent approaches and procedures between different Forests and that too often Forest personnel leave before tribes know who to contact if they have needs or concerns. Tribes support the Forest’s efforts at site protection and for active prosecution of ARPA cases

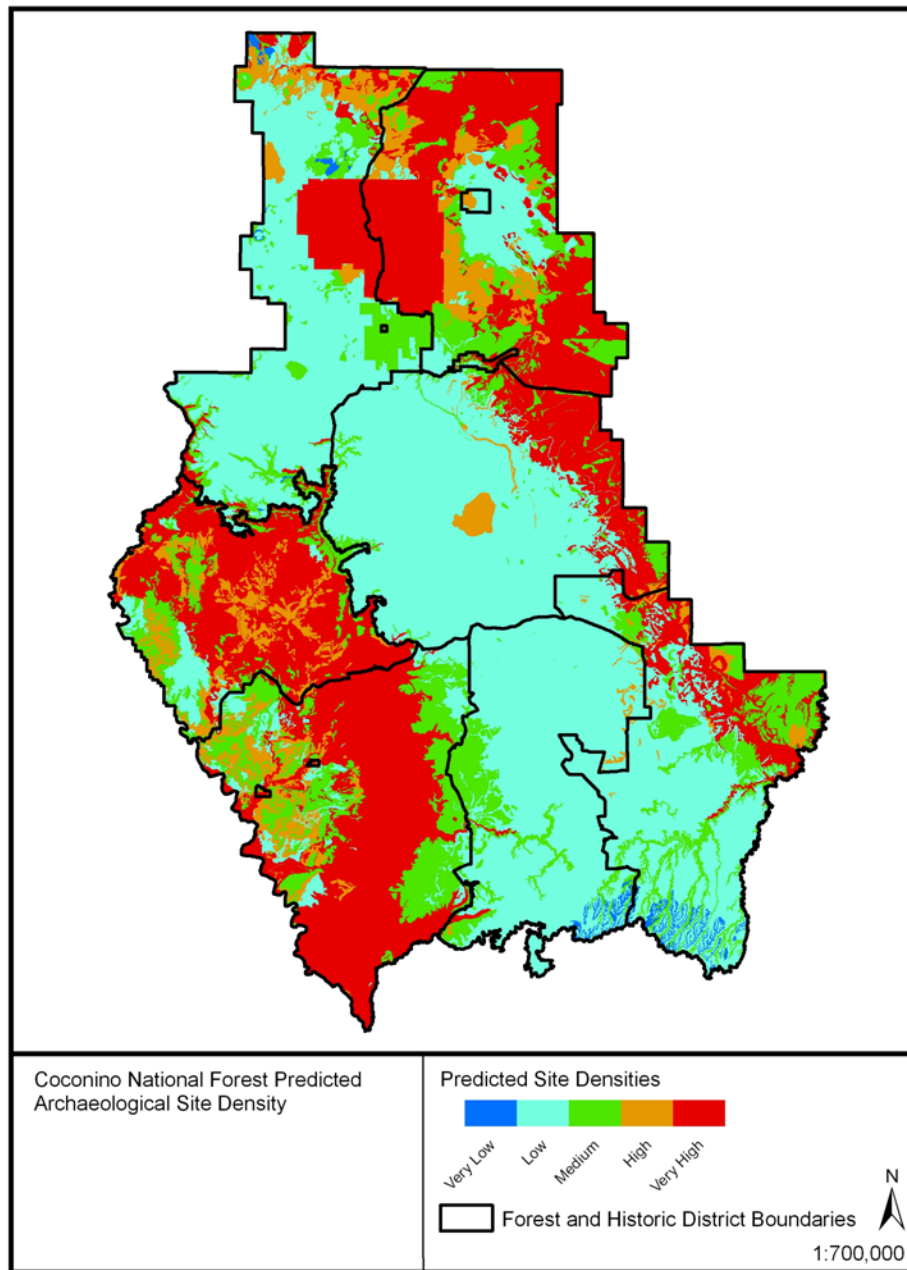


Figure 1. Archaeological Site Densities of the Coconino National Forest

Current Issues

Collections Management

Over the years, the Forest has acquired substantial collections of artifacts, due to excavations conducted in-house to facilitate Forest development and land exchange projects, routine sample collections during archaeological site surveys, collections and artifacts made in the past by individuals who returned them to the Forest, illegally obtained collections turned over to the Forest as a result of legal proceedings related to criminal prosecutions, excavations from the

Elden Pueblo public archaeology program, and other sources. These collections consist of catalogue artifacts (special items such as pottery vessels, projectile points, tools, prehistoric cloth, baskets, etc.) as well as “bulk” artifacts (bags of pottery sherds, flakes of stone, fragments of grinding stones, etc.). At present, most catalog artifacts are stored in a laboratory in the Forest Supervisor’s Office and bulk artifacts are stored in a warehouse at the Peaks Ranger Station. While secure, these facilities are not adequate and are not readily available to the public or for scientific research. In 2009, a collection’s curation agreement was initiated with the Museum of Northern Arizona and Forest collections are gradually being transferred to the Museum for permanent curation. However, this is being done as time is available from other Forest responsibilities and is not moving as rapidly as is desirable.

Developed Interpretive Sites

A number of sites have been developed for public interpretation and education. The development level of these sites ranges from a simple sign to full-scale development, complete with visitor centers, parking lots, and on-site interpreters. Visitation at these sites is increasing every year, and the capacity to provide a meaningful and pleasant cultural experience is maxed out at one of these sites, Palatki. No procedures have been formalized to address management options when public demand exceeds the capacity of these individual sites to provide a satisfactory experience.

Tribal Relations

Over a period of about 25 years, the Forest steadily built a sensitive, respectful, and productive relationship with the tribes who maintain cultural traditions associated with the land that is now part of the Coconino National Forest. That trusting relationship has been severely damaged by the Forest’s decision to allow snowmaking with treated effluent water as part of the Snowbowl’s expanded development. The tribes have told the Forest that there is no possible mitigation of the adverse effects such development will have to their cultural and spiritual well-being.

Summary of Alternatives

Most of the areas identified as Heritage topics or projects in the original Forest Plan, the Current Plan, Alternative A, have either been accomplished, have become standard practice over the years, or are no longer issues of concern. There are, however, several topics from that Plan that remain to be addressed by Plan revision:

1. Though following the letter of the law, the reaction by the tribes to the Snowbowl Development decision indicates current policies are inadequate to protect American Indian sacred places and an insensitivity or lack of understanding of the significance of such places in maintaining cultural identity and cultural viability:
2. Current level of heritage site enhancement and interpretation is inadequate to meet future project demands.
3. Projected future demands for energy development and transmission could cause conflicts with cultural and other resources and uses.
4. The Forest has not prepared a nomination for the General George Crook Military Road to the National Historic Trails System. Only some interpretation, related recreational development, and coordination with the other Forests on which the road is located (Prescott and Apache-Sitgreaves) has been done.

5. There are no management prescriptions/priorities/efforts to survey non-project areas. Priority should be given to Wilderness and Special Areas with predicted high site densities.
6. When designated as Special Areas, natural and cultural resource surveys should be conducted to specifically identify those special values the area contains. Management plans should then be drafted to conserve, protect, enhance, and interpret those values for public knowledge and edification.

Four alternatives are analyzed in detail in this Specialist Report: Alternatives A through D. Alternative A is the current 1987 Coconino National Forest Plan, and Alternative B is the Preferred Alternative/Proposed Action, drafted over the past several months and refined with several tranches of internal and informal public feedback. Alternative C considers increases in the amount of wilderness and special areas, as well as increased opportunities for quiet semi-primitive recreation, while Alternative D considers slightly fewer restrictions than Alternatives B and C on human access and use of the Forest and its resources.

Alternatives B, C, and D do not contain the specificity of Alternative A but instead, focus on long-term desired conditions and objectives that allow managers to evaluate their progress towards achieving long-term goals and desired conditions. These alternatives remove references to existing law, regulation, and policies to support proposed goals and desired conditions with an understanding that those authorities will continue to be followed for all Forest activities. Redundant information and project proposals contained in a number of different Management Area discussions have been reduced. The sometimes confusing overlaps between objectives, standards, guidelines, desired conditions, and emphasis areas of the 1987 plan have been changed to emphasize management approaches that can be used to achieve desired conditions and the intent behind each guideline rather than explicit directions that must be followed.

Alternative A – the 1987 Plan

Alternative A would continue the status quo. The majority of Heritage Program work would be done to provide cultural resource clearance for projects following the Southwest Region Programmatic Agreement. Conflicts between projects and heritage values would be dealt with as specified in the Programmatic Agreement, supplements to that agreement, or project-specific agreements. Non-project related work would focus on those specific projects and activities originally proposed in the 1987 Plan that have not yet been completed, although higher priorities have developed since then. Surveys of Special Areas and management approaches based on those surveys could be done, but there would be no specific schedule for this. Reliance would be placed on volunteers and opportunities that may arise to accomplish most non-project related archaeological surveys, interpretation and site enhancement programs, site protection, and collections management. Tribal Relations and consultation would follow the guidance provided by Regional and Washington directives and efforts would be made to rebuild relationships damaged by the Arizona Snowbowl development decision. As periodic revisions are made, additional heritage-related projects and activities may be proposed to more specifically address heritage-related issues.

Forest restoration efforts would be opportunistic and would result in less acres being treated than the other alternatives, leaving much of the Forest with a fuels build-up conducive to extreme forest fires that could damage or destroy heritage resources, particularly historic period structures that are most numerous in the forested zone.

Conducting a study and preparing a National Historic Trail nomination for the General George Crook Trail will take considerable time and funding to accomplish and future fiscal predictions are not very optimistic for receiving such funding. Developing partnerships to prepare the nomination is another possibility. However, the General George Crook Trail already is a National Recreation Trail and has specific management guidelines attached with it to ensure the protection and integrity of the Crook Road. It has a management zone that extends 200 ft. from each side of the road in which its integrity of condition and setting will be maintained. This requirement is in each of the alternatives under consideration.

Plan components common to Alternatives B, C and D

Alternatives B, C, and D propose the creation of new Wilderness Areas and Special Areas which would protect archaeological sites from disturbance by project-related activities, such as demands for energy development and transmission facilities, and decrease road accessibility by potential vandals.

Alternatives B, C, and D, acknowledge the desired future conditions for the various elements of the Forest's Heritage Program – project clearances, site protection, site stabilization and repair, site enhancement and interpretation, collections management, research, and tribal relations but do not provide for any direct or specific way to address them. They do, however, recommend a new approach for evaluating and managing sites – an evaluation of archaeological site types by archaeological localities. Such evaluations would determine the research needs, scientific values, and significance of the various site types and localities. This would provide information that would allow for better decisions about site inventory needs, National Register eligibility, site protection, and priorities for site management.

Alternatives B, C, and D address the continuing topics from the original Forest Plan in much the same way as described for Alternative A. The majority of Heritage Program work would be done to provide cultural resource clearance for projects following the Southwest Region Programmatic Agreement. Conflicts between projects and heritage values would be dealt with as specified in the Programmatic Agreement, supplements to that agreement, or project-specific agreements. Surveys of Special Areas and management approaches based on those surveys could be done, but there would be no specific schedule for this. Archaeological surveys of Special Areas, other non-project related surveys, interpretation and site enhancement programs, site protection, and collections management could be planned as funded projects, or through the continued use of volunteers. Tribal Relations and consultation would continue to follow the existing and on-going guidance provided by Regional and Washington directives. Developing tribally-specific Memorandae of Agreement would be a priority and efforts would be made to rebuild relationships damaged by the Arizona Snowbowl development decision. Projects and activities may be proposed to more specifically address heritage-related issues when needed.

Alternative B

Alternative B would expand the San Francisco Peaks Research Natural Area and the Strawberry Crater Wilderness Area, create two new Wilderness Areas, one new Research Natural Area, and the Cottonwood Fumeroles Geological Special Area. Most of these have very high archaeological site densities and the San Francisco Peaks and Strawberry Crater Wilderness Area have high cultural significance.

Alternative C

Alternative C would create more Special Areas than any other alternative. As with the other alternatives, it would expand the San Francisco Peaks Research Natural Area and the Strawberry Crater Wilderness Area. It would also create 11 new Wilderness Areas, a Cottonwood Basin Fumeroles Geological Special Area, and a Cottonwood Basin Fumeroles Botanical Special Area.

Alternative D

Alternative D considers fewer restrictions than Alternatives B and C on human access and use of the Forest. It would expand the San Francisco Peaks Natural Area and create two new Wilderness Areas, West Clear Creek and Rocky Gulch.

Description of Affected Environment

Cultural History Overview of the Coconino National Forest

The Coconino National Forest is the third largest National Forest in Arizona, consisting of over 1,800,000 acres, and stretches from the Little Colorado River to the Verde River. The most prominent natural feature of the Forest is San Francisco Mountain, north of Flagstaff. Known locally as “The Peaks”, the mountain consists of four Peaks – Agassiz Peak, Abineau Peak, Doyle Peak, Fremont Peak, O’Leary Peak, Reese Peak, Schultz Peak, and Mt. Humphreys the highest point in Arizona, at 12, 643 feet.

The Forest is remarkable for its environmental diversity. With a range in elevation from 2,500 to nearly 13,000 feet, it covers numerous distinct ecological areas, ranging from the picturesque Red Rock area near Sedona to pine-covered country along the Mogollon Rim, to the bristlecone pine tundra zone atop the Peaks, home to a unique flowering plant found nowhere else in the world, the San Francisco Mt. groundsel (*Pachera franciscanus*, formerly *Senecio franciscanus*). The Peaks can be seen for a distance of more than 100 miles and are sacred to a number of American Indian inhabitants of the northern Southwest. Snow melt from the Peaks replenishes numerous springs on and around the mountain, which provided the water source that allowed the growth of Flagstaff during its early years in the 1880’s. Today, deep wells in the Lake Mary area provide most of Flagstaff’s water, but rainfall generated by the Peaks, as well as snow melt, provides water for wildlife, livestock, as well as people, and also provides moisture for the crops that are the mainstay for Hopi and Navajo farmers.

The natural resources of the Forest have provided sustenance for people since the earliest appearance of humans in the New World. Spear points that are the distinctive hallmark of the Clovis archaeological tradition have been found at 11 sites within the boundaries of the Forest (Pilles and Geib 2001). These points are specialized tools that were developed for the hunting of big game animals and are dated between 13,500 and 11,500 years ago. Although none from the Forest have yet been found in association with mammoths and mastodons, the classic prey of the Clovis hunters, remains of these elephant-like beasts have been found near Camp Verde and along the Little Colorado River (Agenbroad and Mead 1989).

As the climate became cooler and drier, the large animals became extinct and smaller animals, such as deer and rabbit, were most commonly hunted. Wild plant foods also became a more important part of the diet for the Archaic period hunters and gatherers. By 2100 years ago, Late Archaic people had begun to cultivate corn, beans and a variety of squashes alongside wild plant foods. But it was not until about A.D. 200 that agriculture and settled villages became established

and with that, the beginnings of the major prehistoric cultures of the Southwest – the Mogollon, Hohokam, and Prehistoric Pueblo. Within the area of what would become the Coconino National Forest, however, population densities, climate, and an abundance of wild plant and animal resources allowed the Archaic life style to exist until about A.D. 600, when agriculture, manufacture of pottery, and sedentary life in pit house villages indicate a new life style had been adopted. This life style has been called “Sinagua”, a name applied to them from the term the early Spanish explorers gave to San Francisco Mountain – the *Sierra Sinagua* – the “mountains without water” (Colton 1939:34). Neighboring cultures were the Cohonina, northwest of the Peaks, and two Ancestral Pueblo groups along the Little Colorado River – the Kayenta to the north, and the Winslow to the east.

The prehistoric hunters and gatherers of previous centuries had lived lightly on the land, leaving little trace of their presence; however, early Sinagua farmers had developed soil and water control technologies that resulted in long-lasting effects on the environment, including deforestation, reduction of game populations, and depletion of soil nutrients. Their dry-farming techniques included rock terracing, grid borders, gravel mulching, check dams, and run-off water diversion and reservoir systems. Between A.D. 600-1400, such systems were constructed over large areas, especially in the Verde Valley and Anderson Mesa areas, and can still be seen today. But with climate changes to warmer and drier conditions and a change in the seasonal precipitation pattern, as well as deteriorating health conditions, dissolution of long-standing trade relationships and break-down of social institutions, the Sinagua cultural tradition came to an end and was absorbed into the emerging Hopi cultural pattern to the east and northeast.

In 1583, when Antonio de Espejo led the first Europeans into the area in search of mineral wealth, they encountered Yavapai living along the creeks of the Verde Valley, near the ruins of major Sinagua pueblos. But finding little to interest them, the Spanish ignored central Arizona, establishing missions among the Hopi Mesas to the north, until they were killed or driven away during the Pueblo Revolt of 1680.

Mountain men began exploring the Mogollon Rim and Verde Valley regions in the 1820's, trapping beaver and fox along the virgin creeks of the region, having little impact on the land or the environment. But that quickly changed with the discovery of gold near Prescott in 1863. That same year, Arizona was separated from the New Mexico Territory and was quickly followed by the creation of Yavapai County in 1864. Gold fever hit the Territory, and people flocked into central Arizona with a frenzy. Pioneers moved into the Verde Valley to grow fresh fruit and vegetables for the miners of Prescott, disrupting the hunting and gathering land use practices of the native Yavapai and Tonto Apache in the process. Frictions quickly developed into hostilities and in 1865 a military force was established near present-day Camp Verde to protect the settlers and move the Indians onto a reservation. Crooked Indian agents and increased demands for reservation lands led to the forced removal of the Yavapai and Tonto from the fertile Verde Reservation to the barren desert of the San Carlos Reservation in 1875.

Immigrants from the east coast settled at a spring along the route of the Atlantic and Pacific Railroad in 1876 and during their July 4th celebrations, raised an American flag to the top of a tree, giving the spring a new name – Flagstaff. The name continued to be used when a railroad construction camp was established at the spring in 1882. Development of northern Arizona by lumber, cattle, sheep, agricultural, and mining interests continued through the 1880's. The Aztec Land and Cattle Company ran 60,000 cattle over the largest cattle range in northern Arizona, which included parts of the future Coconino and Apache-Sitgreaves National Forests. The Atlantic and Pacific Railroad reached the area in 1882, helping Edward Ayer develop a thriving lumber company as he bought up considerable land around Flagstaff and the Kaibab Plateau.

With the development of the railroad, tourism rapidly became another industry and by 1886 John Hance was advertising the wonders of the Grand Canyon.

In 1893, as settlement and commercial development of the region rapidly grew, Coconino County was established by the Territorial Legislature, with Flagstaff as the county seat, and the Grand Canyon Forest Reserve was proclaimed by Presidential proclamation. This was followed five years later with the establishment of the Black Mesa and San Francisco Mountains Forest Reserves as well.

Having witnessed the destruction of the forests of the Great Lakes region, and the flooding, erosion, river pollution, and other environmental disasters that accompanied the unregulated logging of the time, a conservation movement began in the eastern United States during the 1870's. A concern was voiced that without government control, the forests of the west would suffer a similar fate and the creation of the U.S. Division of Forestry in 1876 was, in part, an effort to deal with the public lands of the western states. Congress had reviewed numerous attempts to change federal land use laws but development interests consistently side-tracked those efforts. Finally, in 1891, after a two-year long review of public domain statutes, "an Act to Repeal Timber Culture Laws and for other Purposes ..." was passed that was an effort to revise the land laws of the country. Better known as "the Creative Act" or the "Forest Management Act", it is considered today to mark the beginning of a new policy for the disposition of public lands in the United States and the birth of the National Forest System (Steen 1992:vii, 8). Among its many provisions, it authorized the President to proclaim Forest Reserves to protect the watersheds of the western states and to provide for sustained production of timber and forage. Initially, the Forest Reserves were administered by the Department of the Interior, but in 1905, those responsibilities were transferred to the Department of Agriculture and its "Bureau of Forestry", renamed the "Forest Service" in 1907 (Steen 1992:8).

While Forest Reserves identified areas to be managed, it remained to designate National Forests to actually perform the work. On July 2, 1908, all of the San Francisco Mountains Reserve, and parts of the Black Mesa, Tonto, and Grand Canyon Forest Reserves, were merged and named the Coconino National Forest by President Theodore Roosevelt. [The word "Coconino" is one of several variations/spellings of the Hopi word for the Havasupai Indians, including "Cosnino", "Cohonina", "Coch-ni-ch-nos", "Kohonina", "Konin", "Kònin", "Kònonin" (Barnes 1935:101, Colton 1939:28, Granger 1960:60, Hopi Dictionary Project 1998:150)].

In the early years of the Forest Service, many Rangers came from local families and had a long-term familiarity with the land and the community they served. After leaving the Forest Service, many stayed in the area, operating their own ranches, becoming local law enforcement officers, working for the logging companies, or serving in some other local capacity. Rangers spent much of their time riding horseback patrols of the Forest, meeting with ranchers to discuss the numbers of livestock being grazed on the Forest, patrolling and repairing fence lines, monitoring activities on timber sales, and, of course, spotting and dealing with forest fires. Their activities and authorities were prescribed by "the Use Book", a 142 page, pocket-sized manual written in 1905 that included all the rules and regulations of the Forest Service, as well as practical instructions on how to perform the duties of a Forest ranger. Over the years, it has grown to become the Forest Service Manual (FSM) with a series of handbooks as well as Regional and Forest supplements.

Between 1909 and the 1940's, the Forest Service devoted considerable attention to the inspection and administration of homestead claims on the National Forests. One of the programs of the federal government during that time was to promote the settlement of the west by giving federal lands to private individuals through a series of Homestead Acts. The program began in 1862 and

was augmented by several additional Homestead Acts passed by Congress between 1909 and 1918 to bolster dry farming of grains and grasses, stock raising, and reclamation of lands through irrigation. Although each law had somewhat different requirements, in general, heads of households 21 years or older could claim 80 to 160 acre homesteads by filing a claim, constructing improvements, maintaining continuous residence on the claim, and farming or grazing the land for a period of five years (Stein 1990). At the end of five years, the land would be deeded over to the homesteader if all of the conditions had been met. Forest rangers administered various aspects of the homestead program, maintained records of how many acres were being cultivated under the program, and routinely inspected homesteads to ensure they were being lived-in, improved, and used as per the laws' requirements.

The Forest has also been the subject of numerous studies by another scientific institution of international renown, the Museum of Northern Arizona. Founded in 1928 to preserve and study the cultural and natural history of the Colorado Plateau, the Museum has conducted landmark research into the geology, volcanology, paleontology, anthropology, archaeology, botany, and biology of northern Arizona and the Coconino National Forest. In addition to displays of art as well as the sciences in the Museum itself, public programs form a major component of MNA's activities to educate school children as well as adults about the scientific wonders of the area. Many of its summer programs are conducted on the Forest, including cooperative projects with the Forest at Elden Pueblo. The Museum has actively encourage the continued production and development of arts and crafts associated with the Hopi and Navajo cultures since the 1930's with the Hopi and Navajo Shows. In more recent years, similar events have been developed for the Zuni, Pai, and Mexican cultures.

Northern Arizona University was established as Arizona State Teachers College to provide teachers for rural areas and training in agriculturally-related activities. Today, it has expanded well beyond that original purpose into a major research institution. Each year, the Forest issues or administers approximately 40 research permits to various departments in the university for the purpose of conducting research projects on the Coconino National Forest. A number of these are done in partnership with the Rocky Mountain Forest and Range Experiment Station, part of the Forest Service's research branch, which is located on the NAU campus.

Cooperating Institutions and Agencies

Six National Monuments are within, or in close proximity, to the Forest and are preserves that protect some of the most significant cultural and natural resources of the Southwest. Walnut Canyon came under the protection of the Forest Service in 1898 as part of the San Francisco Mt. Forest Reserve. In 1910, the recently created Coconino National Forest assigned a ranger to protect the well-known cliff dwellings. It continued to be administered by the Forest until 1915, when it was designated a National Monument in the U.S. National Park Service System. Wupatki and Sunset Crater national Monuments feature a landscape created by the most recent volcanic eruptions, now thought to have occurred probably in the 1080's, when the area was occupied by the prehistoric Sinagua. Investigating the effects of the eruption on local cultural developments, as well as the climatic history of the area, has been a topic of long-standing scientific interest. To the south, in the Verde Valley, Montezuma Castle, Montezuma Well, and Tuzigoot National Monuments display some of the last pueblos inhabited by the Southern Sinagua between A.D. 1300 and 1400. The entrance road to Walnut Canyon National Monument is National Forest land, as is the Sunset Crater visitor center and Bonito Campground. Archaeologists from the Forest often assist in training the Park Service seasonal interpreters and have recently provided unique artifacts to enhance the new displays at Tuzigoot and Wupatki National Monument. Through a cooperative agreement, National Park Service personnel monitor archaeological sites in proximity

to our common boundaries. Park Service stabilization professionals have also provided advice during the stabilization of Honanki and Palatki, Forest Service cliff dwellings near Sedona.

Most of these monuments, Wupatki, Sunset Crater, Walnut Canyon, and Montezuma Castle, were originally on National Forest land and under Forest Service administration before they were proclaimed National Monuments by various Presidents under the authority of the 1906 Antiquities Act. In 1979, 13 acres containing fossil mammal tracks on the Forest from the Pliocene and Pleistocene were transferred to Montezuma Castle National Monument and in 1996, 1,380 acres of National Forest land were given to the Park Service to expand the boundaries of Walnut Canyon National Monument. At the present time, a study is being made of the Forest lands around the monument and the suitability to co- manage the area to better protect the values of the area and enhance the missions of both agencies.

In addition to its natural diversity, the lands of the Coconino National Forest have significant cultural resources as well. Most of the region occupied by the prehistoric Northern Sinagua and Southern Sinagua cultures are on Coconino National Forest land. Pre-agricultural traditions represented on the Forest begin with the Clovis culture Paleo-indians, which may date as early as 13,000 B.C., and the Early, Middle, and Late Archaic periods of about 9,000 B.C. to A.D. 600. Prehistoric agricultural groups, besides the Sinagua, that occupied the Forest include the Cohonina, Kayenta, Winslow, and Hohokam traditions. In historic times, the Forest was used by the Hopi, Acoma, Zuni, Navajo, Walapai, Havasupai, Paiute, Tonto Apache, and Northeastern Yavapai.

Tribal Relations

Through years of working with Indian tribes that have ancestral, traditional, religious, and cultural values of the lands that are now within the boundaries of the Coconino National Forest, the Heritage Program staff has been made aware of many traditional cultural properties within the Forest. Pre-eminent among these are the San Francisco Peaks, which hold deep meaning and significance to at least 13 tribal groups, and are important to various degrees to almost every other tribe in the western United States. Since 1939, a skiing facility has existed on the San Francisco Peaks, the existence of which is an affront to many Indian people. In the late 1970's and again in the 2000's, the Forest Service approved expansions of the facilities at Snowbowl, despite objections from the tribes of the effect those developments would have on the religious and cultural values of their people. Both times, those proposals were challenged by lawsuits that eventually went all the way to the Supreme Court, and both times the Supreme Court refused to hear the case. The most recent case focused on Snowbowl's intent to make artificial snow using treated effluent water. The most valuable resource for life in the desert Southwest is water. At the core of almost every Southwestern tribe's culture, religion, and value system is water, and most tribes see the San Francisco Peaks as the single, pre-eminent source of all water, and, therefore, all life. To them, snowmaking is an intrusion into the natural order and an invasion into realms that only higher powers are responsible for. The Snowbowl decision is seen by the tribes as yet another effort by the government to further erode their culture, and without their culture, they can no longer exist as a people.

The Snowbowl decision destroyed a relationship that was built up over 25 years between the Forest and the tribes working together as colleagues with a shared stewardship responsibility. It has undercut the credibility of the Forest Service with Indian people and has created a breach that will be very difficult to restore.

Heritage Resources – Current Condition

Since the start of the Forest Archaeological Program in 1975, about 19 percent of the Forest has been completely inventoried for archaeological sites, and about 40 percent has been sampled. Archaeological site densities are among the highest known site densities in the Southwest, ranging from 1 to 99 sites per square mile, but averaging about 12 sites per square mile. Using a predictive model developed from survey data, it is predicted that the Forest contained about 75,000 archaeological sites, of which about 10,000 have been formally recorded.

Of these, 2,503 have been determined eligible for the National Register of Historic Places, 481 have been determined ineligible for the Register, 63 sites or segments of linear sites (such as roads or logging railroad grades) have been determined to be contributing elements, and 31 sites or segments of linear sites have been determined non-contributing elements. 144 are formally listed on the National Register of Historic Places either individually, as a District, as part of a Thematic Nomination, or a Multiple Property Nomination (table 2). Of the listed properties, two are National Historic Landmarks – Winona Village and the C. Hart Merriam Base Camp. Mayhew Lodge and 31 individual structures of the Childs-Irving Hydroelectric Power Project along Fossil Creek, owned by Arizona Public Service Co., were previously listed on the Register, but Mayhew Lodge was delisted after it was destroyed by fire in 1980 and all structures but one of the Childs-Irving facilities were razed or removed between 2005 and 2010 when the power system was not relicensed by the Federal Energy Regulatory Commission and Fossil Creek was restored to its former natural setting.

Although formally determined not eligible for the National Register of Historic Places, nine other fire lookout towers have been listed by the Forest Fire Lookout Association's National Historic Lookout Register.

Approximately 150 places within the Forest have been identified as “traditional cultural properties” (TCP). A TCP is a place that is significant for its “role in a community’s historically rooted beliefs, customs, and practices” (Parker and King 1990:1). On the Forest, these consist of shrines, collecting areas, mountains, rock formations, cinder cones, parks, springs, waterways, trails, ancestral sites, and other places that have been identified as significant to the Hopi, Navajo, Yavapai, Walapai, Havasupai, Apache, and San Juan Southern Paiute. A number of places, such as the San Francisco Peaks, are TCP’s that are identified by several tribes as being sacred places or collecting areas. As with archaeological sites, the location and information about cultural practices associated with TCP’s are exempt from disclosure to the public by Executive Order 13007 – Indian Sacred Sites and the Food, Conservation, and Energy Act of 2008, HR 6124 (The Farm Bill).

Table 2. National Register properties on the Coconino National Forest or privately owned properties permitted on Forest land

Property Name	No. of Sites	Other Designations/Ownership
Elden Pueblo	1	
Ft. Valley Experiment Station	1	
C. Hart Merriam Base Camp	1	National Historic Landmark
Honanki (Loy Butte) National Register District	15	
Ridge Ruin National Register District	39	
Sacred Mt. National Register District	6	
Nuvakwewtaqa (Chavez Pass) National Register District	22	
Clear Creek Ruins National Register District	33	
Winona Village National Register District	8	National Historic Landmark
Logging Railroads of the Coconino and Kaibab National Forests Multiple Property Nomination	7	
Depression Era Structures Multiple Property Nomination	1	
Fire Lookouts in the Southwest Region Thematic National Register Nomination	5	
Route 66	1	ADOT property, CNF Permit
ADOT Bridges Multi-Property Nomination	4	ADOT property, CNF Permit
TOTAL SITES:	144	

Archaeological Survey Coverage

Estimates of archaeological site densities and sensitivities are based on the numbers of sites found within reported survey areas within different environmental areas as identified by specific TES unit designations. However, survey coverage is not evenly distributed over the various environmental zones represented on the Forest. Archaeological survey coverage is determined each year by the projects that are proposed for that year, since funding for surveys is based upon project needs. Surveys conducted purely for archaeological reasons are limited to out-service or volunteer organizations. This has resulted in Forest survey data being weighed more heavily to the ponderosa pine forest zone, an area that has historically had more intensive management focus due to timber sales, fire suppression, and, more recently, projects to reduce potential wildfire threats to populated areas. Surveys, however, indicate that the under-represented pinyon-juniper zone has much higher site densities than the ponderosa zone. Site information for other environmental areas where even less survey coverage exists, such as the tundra on the San Francisco Peaks, an area of highly sensitive cultural value, and steep canyon slopes, where numerous rock shelters, caves, and cliff dwellings are known to occur, must also be considered less reliable than for other environmental zones.

Archaeological Site Condition

Information on the condition of archaeological sites is found in the Forest's Archaeological Site Log, where condition information is available for 4,806 sites as of December 30, 2010. When sites are recorded, their condition is noted on a 0 to 5 scale, where 0 indicates an undisturbed site and 5 indicates a site that has been completely destroyed. Table 3 shows site conditions in different parts of the Forest, as represented by the seven former Ranger District boundaries, which still form the basis for the designation of sites on the Forest. The table shows that site conditions on the two Verde Valley Districts (D-1: Beaver Creek and D-6: Sedona) are identical, as is the case for the area around the San Francisco Peaks (the D-2: Elden and D-3: Flagstaff Districts). The area around the Peaks has the most undisturbed sites, as well as the most highly disturbed sites. The districts in the high pines (D-4: Long Valley, D-5: Mormon Lake, and D-7: Blue Ridge) are dissimilar to one another as well as to the Verde Valley and Peaks areas.

Table 4 shows the various causes of site damage, with roads being the single-most cause of site damage (20%), followed by vandalism and pot hunting (7%). Other causes of damage, such as logging, juniper eradication, fire suppression, etc., are significantly less.

Table 3. Site conditions on the Coconino National Forest by administrative unit

Current Ranger District	Previous Ranger District	Undisturbed	Cond. 1	Cond. 2	Cond. 3	Cond. 4	Cond. 5
Red Rock	Beaver Cr.	16%	20%	18%	18%	16%	9%
Red Rock	Sedona	14%	17%	18%	19%	22%	12%
Flagstaff	Elden	23%	17%	23%	19%	20%	33%
Flagstaff	Flagstaff	13%	18%	20%	18%	17%	24%
Mogollon Rim	Long Valley	2%	5%	5%	7%	7%	4%
Flagstaff	Mormon Lake	11%	9%	6%	8%	13%	11%
Mogollon Rim	Blue Ridge	21%	14%	10%	11%	6%	6%

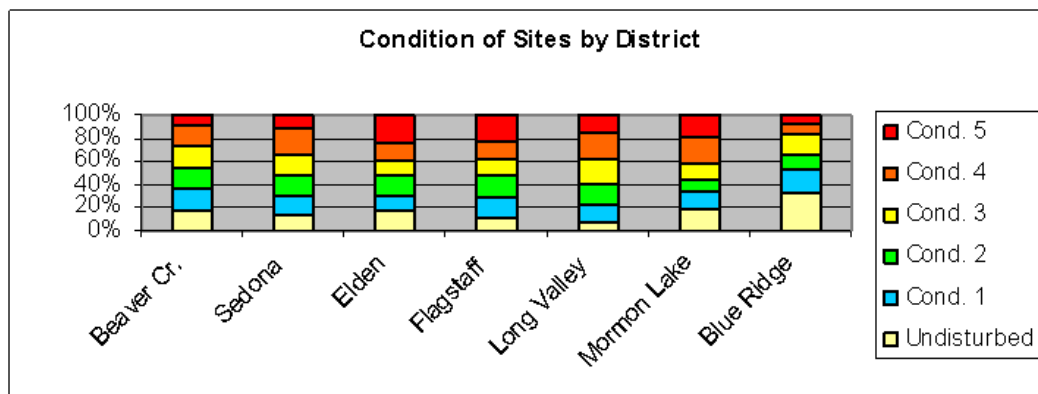


Table 4. Causes of disturbance to archaeological sites on the Coconino National Forest

Disturbance Cause	Beaver Creek	Elden	Flagstaff	Long Valley	Mormon Lake	Sedona	Blue Ridge	TOTAL	Percent
Undisturbed	356	520	284	53	225	305	315	2,058	48%
Roads	61	151	218	48	171	121	67	837	20%
Pot Hunting & Vandalism	41	106	21	7	17	98	30	320	7%
Burned	2	59	74	0	11	2	8	156	4%
Logging	0	24	70	35	14	6	26	175	4%
Recreation	9	29	20	12	13	40	12	135	3%
Power/Phone Line	7	65	9	21	6	28	3	139	3%
Juniper Eradication	14	65	0	2	4	2	33	120	3%
Grazing	36	9	23	13	11	17	9	118	3%
Construction	5	20	37	2	12	24	6	106	2%
Fire Suppression	0	15	45	0	12	7	0	79	2%
Trails	5	12	2	0	0	7	5	31	1%
TOTAL	536	1075	803	193	496	657	514	4274	100%

To summarize site condition, about 48% of all sites on the Forest are undisturbed, with 52% being disturbed. Areas that stand out as being different from the norm consist of the south end of the Verde Valley (Beaver Creek District) where only 11% of sites have been impacted by roads, and Long Valley District, where 28% of recorded sites have been disturbed by roads.

Forest Uses and Impacts to Archaeological Sites

Almost half of sites recorded on the Forest have been disturbed to various degrees and by a variety of causes. Of the disturbance, 11% is due to natural causes, such as erosion and bioturbation, while 89% is due to human causes. Specific causes of damage vary considerably across the Forest (table 4), but roads are the single greatest cause of damage on every part of the Forest, effecting about 20% of all recorded sites.

Roads

Over the Forest, road damage is variable, ranging from a low of 11% of sites in the Beaver Creek area to a high of 34% in the Mormon Lake area. the Sedona area has a higher proportion of site damage caused by roads (18%) than the Beaver Creek area (11%), while to the north, more sites have been damaged by roads on the west side of the Peaks (Flagstaff RD) (27%) than on the east side of the Peaks (Elden RD) (14%). The percentage of sites damaged by roads in the high pine forest is also variable, ranging from 13% in the southeast part of the Forest around Blue Ridge to 34% in the Mormon Lake country.

Vandalism and Pothunting

Besides direct impacts to sites caused by roads, there is also an indirect impact from roads due to the access they provide to archaeological sites. Many studies of site vandalism in the Southwest find a direct correlation between looting of sites and their proximity to roads. Land managers throughout the western United States agreed that the most important factor contributing to vandalism was accessibility by vehicle, 42% considering two-wheel drive vehicle access most important and 27% considering four-wheel drive access most important (Williams 1978:73). Often, unauthorized two-track roads have been developed for no other purpose than to provide access to archaeological sites (Lightfoot and Francis 1978; Ahlstrom, Adair, Euler, and Euler 1992:35). Lightfoot noted the amount of illegal artifact collecting on sites was related to their distance and visibility from a road (Lightfoot 1978). Researchers report a range of distances relating proximity of roads to illegal digging. In southwestern Colorado, there was an overwhelming preference for pothunted sites to be within about a quarter mile of a road capable of two-wheel drive access (Nickens, Larralde, and Tucker 1981:132). In the Little Colorado Planning Unit, artifact collecting seemed most intensive on sites located within 492 ft. of a road (Francis 1978:130). The Perry Mesa vandalism study found most vandalized sites were within 600 ft. of a road (Ahlstrom, Adair, Euler, and Euler 1992:43). On the Apache-Sitgreaves National Forest, all looted sites are within 100 ft. of a road (Schroeder 2010:16), and on the Coconino National Forest, 76% of looted sites are within 0.25 mi. (1,320 ft.) of a road and 82% are within 0.3 mi. (1,600 ft.) of a road (Daquila 2008:7). In a study of vandalism to rock art sites on BLM lands in California, one of the most effective protection strategies was to keep roads 0.25 mi. or more away from sites (Marymore 2005).

Proximity to roads is not the only major factor in determining which sites are looted. Site type is also an important factor (Ahlstrom, Adair, Euler, and Euler 1992:54). Large pueblos, cave sites, and pit house villages with obvious trash/burial mounds have always been major targets of pot hunters and looters.

Off-highway Vehicles and Pothunting

Almost every archaeological crime scene investigated by the Forest has involved the use of a four-wheel drive vehicle or pickup truck. In recent years, however, the use of ATV's seem to be on the increase, as illustrated by several cases. In 1994, one investigation involved several sites east of Flagstaff that had been pot-hunted by someone driving an ATV from one site to the next. Between 2005 and 2008, the John Heath Ruin, east of Camp Verde, was repeatedly dug in by people accessing the site in ATV's. In 2000, ATV's as well as two four-wheel drive pickup trucks, were used by pothunters who were caught and convicted of digging in Kinnikinick, a large pueblo site on Anderson Mesa. The ATV's were confiscated by the Forest as part of the sentencing of the case. In 2007, ATV's were used in connection with the theft of an entire petroglyph panel at the Big Foot Site in the Verde Valley.

Illegal Fuelwood Cutting

Over the past several years, there has been a significant increase in illegal fuelwood cutting throughout the Forest, usually in areas with high archaeological site density. These areas are being patrolled by volunteer Site Stewards, who are reporting significant increases of incidents where pothunting is taking place in association with illegal fuelwood cutting. Damage to sites is also taking place by vehicles driving over them and where downed trees and branches have been dragged across sites.

Among the sites that have been damaged by illegal fuelwood cutting are a number of particularly important archaeological sites. The Winona Village, Ridge Ruin, and Chavez Pass Archaeological Districts, for example, cover about 0.25 to 1 sq. mile each and have been listed on the National Register of Historic Places because of the significant information they have provided for understanding the prehistory of the Southwest. Winona Village has also been designated by Congress as a National Historic Landmark. Each of these districts has been impacted by illegal fuelwood cutting and associated off-road activity, in some places resulting in a spider-web of roads which other people have used to dump trash within the site areas. Repeated efforts to close these roads through signing, barricading, and obliteration have been unsuccessful.

Although District Rangers have the authority to close areas to protect Forest resources, such as archaeological sites, closing areas of high site density on the Forest is not practical as virtually the entire pinyon-juniper zone is a high site density area. Not only are there inadequate law enforcement personnel to enforce such a closure, it would restrict numerous other mandated uses of the Forest by the public. Hopefully, implementation of the Forest's Travel Management Rule, by reducing the number of roads on which people may travel and a general closure to off-road vehicle use, will reduce such activities and their damage to important archaeological sites.

Facilities

Before the 1960's, many sites were damaged by the construction and maintenance of highways, secondary roads, pipelines, material pits, and power lines. After the 1960's, archaeological surveys to identify sites in advance of construction and the excavation of sites slated for destruction were used to mitigate the impacts caused by such projects. With the growth of Forest Service cultural resource management programs, more efforts now take place to redesign such projects to avoid sites. However, many traditional cultural properties, particularly those associated with mountains or other prominent features, have been impacted by construction projects, as well as fire lookout towers, radio communication sites, hydroelectric power plants, reservoirs, and ski developments.

Fire

Most areas of the Forest have been burned from either forest fires in the area above the Mogollon Rim, or grass fires in the pinyon-juniper country. Most fires in the past did not reach the extremely high temperatures that can effect artifacts, dating techniques, or cause rock art or pueblo wall stones to spall. However, with the fire suppression efforts over the last century, forests became unnaturally dense with young trees and build-up of combustible material, contributing to the more frequent high intensity fires the Southwest has experienced in recent years. These fires are having considerable impact on the archaeological resources, consuming log cabins and other historic structures, burning and causing rock art panels to spall off, and altering the dating potential of sherds and obsidian. Intense fire can burn down into the roots of trees which, if growing in sites, can cause dating problems, as well as damage to subsurface materials. In areas where intense fire has completely burned all vegetation away, erosion from summer monsoon rains can increase dramatically, further damaging sites. Fire suppression and rehabilitation activities can also damage sites, particularly when bulldozers are used to construct and rehabilitate fire lines.

Vegetation Management

Considerable damage was done to the Forest's archaeological resource in the 1950's and 1960's when extensive areas in the high site density pinyon-juniper zone were treated to remove junipers

in the belief that this would allow for more grass growth that could sustain greater numbers of cattle. Junipers were removed by either pushing them out of the ground with the blade of the bulldozer, or pulling an anchor chain between two bulldozers to uproot them. Damage was caused by bulldozers driving over sites, dragging junipers through sites, pulling the heavy anchor chain through sites, and pushing the uprooted junipers into piles so they could be burned. Virtually none of the thousands of acres subjected to these disturbances were surveyed by archaeologists before the “pushing” or “chaining” was done.

An historic first for the Coconino N.F, however, is that it may have made the first effort in the Region to protect sites from damage by juniper eradication activities. In the 1950’s, a large juniper eradication project was being planned for the Winona Village-Ridge Ruin area, an archaeologically significant area was subject to extensive survey and excavation by the Museum of Northern Arizona. Knowing the area had a very high site density, and the damage that could result to sites by the project, the Forest requested the Museum of Northern Arizona to flag sites for avoidance so they would not be disturbed. Then-curator David A. Breternitz spent the next several weeks marking sites for avoidance. Today, those sites are still marked by juniper concentrations but were not damaged by the eradication project.

The few surveys that have been done in areas subjected to juniper eradication in the past indicates damage was much more extensive than the 3% figure in Table 4 would suggest. Such activities have ceased on the Coconino National Forest and intensive disturbance of this sort in high site density areas today would either not be done or would have 100% survey conducted and all sites found would be protected from disturbance.

During timber sales in past years, areas would be scarified by heavy equipment to encourage the regeneration of pine seedlings and culled trees branches cut from trees would be pushed by a bulldozer into “slash” piles, which would later be burned. Similar activities are currently being planned by the Four Forest Restoration Initiative (4FRI) on the Coconino, Kaibab, Apache-Sitgreaves, and Tonto National Forests to restore the forests to their more natural condition and remove the build-up of dead and down trees and other combustible materials that contribute to catastrophic high intensity forest fires. A protocol has been developed with tribal and SHPO review to determine appropriate archaeological survey levels for this type of activity. On the Coconino National Forest, areas that will be treated by 4FRI are mostly in the high pines zone, which is characterized by low to very low site densities, and much of it has previously been sampled for timber sales that were done in the past.

Recreation

Recreational use of the Forest has risen dramatically in the last 20 years and with it, changes in the makeup of the audience that uses the Forest and the distances they travel to take advantage of the Forest’s many recreational opportunities. When Arizona became a state in 1912, its population was about 200,000 people. In 1940, the population was less than one-half million people. The period following World War II saw rapid growth until today Arizona is home to over six million people. Accompanying this growth was a change from a dominantly rural population to one that is now mostly urban. In 1900, less than 20 percent of the population lived in the cities; in 2000, over 88 percent now live in urban settings, mostly in the Phoenix and Tucson areas. Phoenix is now the sixth largest city in the U.S. and the fastest growing one as well. Many of the recent residents are retirees and as the Baby Boomer generation retires, it is projected that Arizona’s elderly will increase from 13 percent in 2000 to 22 percent in 2030 (Arizona State Parks 2007:34-36).

Most Forest visitors are not locals - 59.1 percent of visitors travel over 100 miles to come to the Forest, and of them, 34.2 percent travel over 500 miles (U.S. Forest Service 2011:Table 9). The most popular activities are viewing natural features, hiking/walking, viewing wildlife, “relaxing”, driving for pleasure, and visiting historic sites (U.S. Forest Service 2011:Table 13).

Camping is a major aspect of recreational use of the Forest and activities related to camping have been identified as one of the fourth highest causes of damage to archaeological sites on the Forest (table 4). Dispersed camping takes place throughout the entire Forest but the most popular areas, with the highest densities of campers, is along the edges of meadows, riparian areas, wetlands, and in the ponderosa pine and aspen forest zones. Current monitoring activities of camping patterns and impacts indicates that soil and vegetation within meadows, wetlands, and riparian areas are being negatively impacted, while impacts within the ponderosa pine and aspen forests are considerably less (U.S. Forest Service 2011:31).

Camping Patterns: From a Forest-wide perspective, although recreational activities are among the fourth highest class of damage to archaeological sites (table 4), camping, by itself, does not cause appreciable damage to the Forest’s archaeological sites. This is largely due to the fact that the majority of camping is done in the high ponderosa pine and aspen forests, where there are very few archaeological sites that could be affected by camping. However, in other popular camping areas, adjacent to meadows and riparian areas, archaeological sites are more numerous and can suffer from camping-related impacts. The most common such impact results from repeated cross-country travel, where compaction from continued travel, and rutting in wet soils, results in artifact breakage and displacement – destroying artifact patterns that might otherwise reveal patterns of prehistoric use. At the other extreme, illegal collecting of artifacts, such as painted pot sherds and projectile points, or digging in sites in search of artifacts and historic collectibles, can be an indirect source of damage to archaeological sites.

The Forest’s Travel Management Plan (U.S. Forest Service 2011) calls for concentrating more people into fewer camping corridors. In high site density areas, this may lead to increased traffic and impacts to sites and artifacts in these designated corridors; however, with most camping corridors in low site-density ponderosa forest areas, eliminating proposed camping corridors from sensitive high site density areas, monitoring sites, and making changes needed to better protect sites in the corridors, impacts can be kept within acceptable limits.

The Heritage Program of the Coconino National Forest

The Heritage Program of the Coconino National Forest is focused on six elements:

- Project Clearances
- Site Protection
- Enhancement and Interpretation
- Research
- Curation of Collections
- Tribal Relations

Project Clearances

The major component of the Heritage Program is ensuring projects are in compliance with laws, regulations, and policies concerned with the protection of archaeological sites from federally

conducted or permitted undertakings. In-house projects are evaluated by Forest Service archaeologists to determine what level of archaeological inventory and evaluation is necessary to ensure site protection during project implementation. Simply stated, the level of archaeological work needed for a project depends upon the expected archaeological site density and the intensity of ground disturbance or commitment of land area anticipated for a project. In high site density areas with intense ground disturbance, 100 percent archaeological survey is required. For projects in medium to low site density, and moderate to minimal ground disturbance, a sample survey of roughly 15-40 percent survey is usually sufficient to ensure site protection. The Forest uses an internal documentation process to document compliance with the laws, regulations, and policies that deal with cultural resources. Termed “cultural resources clearance,” a standardized form is prepared for each project (“undertaking” in legal and regulatory terms) that summarizes the extent of archaeological inventory and tribal consultation that is considered necessary to ensure protection of cultural resources during the time a project is being done. This form is sent to the SHPO for their review and concurrence that the Forest has adequately considered the effect of a proposed project, and has proposed adequate safeguards, to protect cultural resources from damage by proposed project activities. The host of laws and regulations pertaining to cultural resources is summarized in 36 CFR 800. This process has been standardized and simplified by a Memorandum of Agreement between the Southwest Region of the Forest Service, the Advisory Council on Historic Preservation, and the State Historic Preservation Officers of Arizona, New Mexico, Texas, and Oklahoma. This document provides guidance for levels of inventory needed for certain kinds of projects, standards for evaluating the eligibility of sites for the National Register of Historic Places, and specific procedures for certain kinds of projects and activities. Most of the funding for the Heritage Program comes from project-related activities and historically constitutes most of the work of the Forest archaeologists.

Since the late 1970s, emphasis has also been given towards considering the effect of proposed projects on the cultural and religious values of American Indian tribes. As part of a regulatory process, this aspect of cultural review has been routinely assigned to Forest archaeologists whose academic training as anthropologists gives them more skills and understanding of cultural values than most other Forest Service disciplines. In recent years, however, tribal consultations are requiring more attention and positions of tribal relations specialists have been created on Forests such as the Tonto, Kaibab, and Coconino to specifically focus on tribal issues and concerns.

Site Protection – Vandalism and Pot hunting

Before the Forest’s Heritage Program was established in 1975, many archaeological sites were damaged by the various activities and projects that were done on Forest land, such as juniper eradication projects, road construction, fire suppression, and logging, with roads causing the greatest amount of damage. Once sites were identified by archaeological surveys conducted prior to project implementation, damage of this type has been significantly reduced.

However, the next most severe cause of site damage is vandalism and “pot hunting” – the illegal and unauthorized digging in sites to find artifacts for personal collections or to sell on the black market. Approximately 49 percent of all recorded sites have been damaged, and of these, approximately 13 percent have been damaged by vandalism or pothunting. This damage is not uniformly spread over all site types, but is most severe on some of the rarest and least understood sites on the Forest – the large, post A.D. 1250 pueblos, and rock art sites. Despite decades of work to educate the public about the laws, looting, and the severe damage caused by these illegal actions, vandalism and pot hunting continue to be a major problem.

Forest personnel during their regular activities routinely watch for evidence of site vandalism, however the main source of site protection on the Forest is the Arizona Site Steward Program. The Site Stewards are a volunteer group organized and coordinated through the office of the Arizona State Historic Preservation Officer. These volunteers are assigned sites by the archaeologists of various land managing agencies which the Stewards monitor on a variable schedule. Stewards go through a training program that includes procedures to follow should they observe incidences of recent vandalism. At the present time, Site Stewards are monitoring about 200 sites on the Coconino National Forest. In addition, Site Stewards are also conducting site surveys in non-project areas.

Site Stabilization and Repair

With the passage of time, all sites are subject to deterioration by a number of sources, both natural and human-caused. Some site vandalism and pothunting cases have resulted in the perpetrators being fined and those funds made available to repair the damage that they caused. However, most vandals and looters are not caught, and, unlike the National Park Service's Vanishing Treasures program, there is no program or line-item in the Forest Service budget to stabilize or repair sites that have been damaged. The only sites on the Coconino N.F. that have been stabilized or repaired, are those that were specifically identified for public interpretation and visitation - Elden Pueblo, Honanki, Palatki, Van Deren Cabin, and General Springs Cabin. Vandalism is evident at many rock art sites, particularly those near towns or in popular recreation areas such as the Red Rock Canyons near Sedona, Red Tank Draw, Pump House Wash, and Government (Lava River) Cave. Even at developed sites, such as Honanki and Palatki, graffiti is a constant problem. Rock art sites near hiking trails, such as those along Kelly Canyon, Cathedral Rock, and Bell Trail also have frequent incidents of graffiti. But graffiti removal has only been done at a handful of rock art sites. Dozens of sites have been identified as needing stabilization, restoration, graffiti removal, or erosion prevention of some sort. Archaeologists can demonstrate that no two sites are alike, and almost all sites can provide useful information, so how can site managers determine which sites are more important than others for stabilization and repair? Where will funding or personnel be found with the resources to deal with the preservation of sites in need of repair?

Site Enhancement and Interpretation

Prehistoric, historic, and cultural sites and artifacts have many values for many different people. For some, it is the craftsmanship of a carefully fitted stone wall or the elegance of a finely painted piece of prehistoric pottery. For others, it may be the wonder of the ingenuity and awareness prehistoric people displayed to adapt to hostile environments and construct amazing architectural monuments. To others, it is the knowledge we can gain of our past, of learning how human beings adapt and prosper, or decline, due to climate change. To some, it just the awe of the past, to hold something in one's hand that is thousands of years old.

All these values, and more, are reflected in the history of art, literature, and science, as well as the history of legislation, regulations, and policies that have developed in the more than 200 years since our country was established. It is also demonstrated by the numbers of people who visit prehistoric and historic sites, monuments, and parks.

Archaeological sites on the Forest are used for educational, recreational, and commercial purposes. Several areas on the Forest are designated as Environmental Study Areas (ESA) and have been established for use by the Flagstaff school system for environmental education. No special use permits are authorized in the ESA's that would affect or change the character of the

ESA. Each ESA is set aside from development for purposes of environmental education and is associated with a specific school. The Forest assists those schools in developing an official school curriculum that is tied to its specific ESA. Archaeological sites are incorporated into the study plans of Flagstaff area schools. The Elden ESA features the site of the John Elden homestead, one of the first settlers of the Flagstaff area, and examines the differences between prehistoric and modern populations of Flagstaff. The Old Caves ESA incorporates Old Caves Pueblo, the last site occupied by the Sinagua in the Flagstaff area between A.D. 1250 and 1400. Teachers at Cromer Elementary School have designed educational curricula that focus on the pueblo and the cinder cone on which it is situated. Forest archaeologists have helped design the programs and interpretation that are conducted in these ESA's.

Forest archaeologists participate in a number of cultural events that take place within the state every year such as Arizona Archaeology Month, sponsored by the State Historic Preservation Office, and the Flagstaff Festival of Science. Numerous tours and lectures are given to a variety of groups each year by Forest archaeologists, who also take advantage of opportunities to promote the heritage resources of the Forest and site etiquette in magazine and newspaper articles as well as radio and television news spots.

A recent study suggests tourism is the world's leading industry, generating \$2.5 trillion that employs one in 15 of all workers in the world, or over 121 million jobs (Winterbottom 1992). The fast growing trend in tourism in the last 20 years has been ecotourism, especially in the area of cultural and heritage tourism

Tourism studies indicate visiting archaeological sites is always in the top five most popular recreational activities in the United States and is the third most important reasons why visitors come to the Southwestern United States (President's Commission on America's Outdoors 1986: 26). A survey conducted by the City of Flagstaff found that 67 percent of respondents indicated visiting archaeological sites as one of their recreational uses of the Forest (Arizona Hospitality Research Resource Center 1990). Heritage tourists spend three times more money, stay four times longer, and have a greater propensity to shop than other tourists (Arizona Humanities Council 1997:5). In the Southwest, as logging, ranching, farming, and mining decline, many rural communities and governmental agencies are looking to recreation and tourism as a replacement for their former economic reliance on extractive industries. On the Coconino NF, for example, there were 3.25 million recreational visits to the Forest in 2005, an increase of 72 percent over 2000. The Southwest Regional Office of the Forest Service has long been aware of the importance of heritage resources as a recreational resource. One of the region's visions for the future said:

“Our immediate focus will be protection and enhancement of our valuable cultural resources and historic sites through development of auto tours, hiking trails, and interpreted sites to allow our national forest customers to learn about and enjoy these resources.” (U.S. Forest Service 1990).

The Coconino NF is located within a region that is known world-wide for its wealth of archaeological sites and cultural resources, such as well National Parks and Monuments, State Parks, Indian tribes, universities, and museums, not to mention its scenic attractions. The Baby Boomer generation is the most highly educated generation the US has seen, and as those people retire, they will certainly create a demand for additional cultural developments and opportunities.

Developing sites for tourism/interpretive purposes, serves a conservation, interpretation, and recreational function, that can also be used to inform the public and increase their knowledge

about the importance of cultural sites and inform them of the need to help the Forest by being cultural stewards of the past, all goals of the Coconino's Heritage Program.

Approximately 90 sites and historic places have been formally interpreted for public information and enjoyment. Interpretation varies from signs, visitor boxes with information, commercial tours, on-site docents, on-site programs, and descriptions in Forest Service recreation guides or published guide books to the region (table 5).

Table 5. Interpreted sites on the Coconino National Forest and method of interpretation

Coconino National Forest - Interpreted Sites									
Site	Site Number AR-03-04-	Sign / plaque	Register Box	Permitted Tours	Self-guided Brochure	Trail	On-site docents	In published guide book	Other
V-V Petroglyphs	01-09				x	x	x	x	
Clear Creek Ruins	01-05		x						
Sacred Mountain	01-80		x	x					
Mindeleff's Cavate Lodge	01-266			x					
Spirit Hunter Petroglyphs	01-606			x					
Red Tank Draw Petroglyphs	01-74, 724, 725, 726		x	x				x	
Palatkwabi Trail	01-743	x						x	
Beaverhead Stage Stop	01-245	x						x	
General Crook Road	01-240	x				x		x	
Beaver Creek Watershed		x							
Stoneman Lake		x							
13 Mile Rock	01-240	x						x	
Apache Maid Ranch	01-106	x							
Childs Power Plant	01-11	x						x	

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Coconino National Forest - Interpreted Sites									
Site	Site Number AR-03-04-	Sign / plaque	Register Box	Permitted Tours	Self- guided Brochure	Trail	On-site docents	In published guide book	Other
Elden Pueblo	02-70		x		x	x	x	x	Public archaeology program for school children, avocational archaeologists, special programs
Doney Mt. Trail	02-113, 2722	x				x		x	
Old Caves Pueblo	02-270					x		x	Public school programs
John Elden Homestead	02-2533	x						x	Part of Elden ESA
Government (Lava River) Cave	03-401				x			x	
Ft. Valley Experiment Station	03-200				x				Tours by appointment
San Francisco Peaks		x						x	
Turkey Hill Pueblo	02-120	x					x		
Flagstaff-Grand Canyon Stage Route	03-36	x				x		x	
Beale Wagon Road	02-1672	x				x		x	
LeBarron Pit House & cliff dwelling	02-524 & 525		x						
C. Hart Merriam Base Camp	03-288	x						x	
Astronaut Training Ground	02-1530							x	

Table 5. Interpreted sites on the Coconino National Forest and method of interpretation

Coconino National Forest - Interpreted Sites									
Site	Site Number AR-03-04-	Sign / plaque	Register Box	Permitted Tours	Self- guided Brochure	Trail	On-site docents	In published guide book	Other
Cliffs Ranger Station	02-429								Photo and text and Peaks Ranger Station
Crater Lake								x	
Woody Mountain Fire Lookout Tower	03-194	x						x	
Watershed Road Tunnel	02-2462							x	
Fern Mt. Ranch	03-287							x	Tours by Nature Conservancy on request
Veit Spring & Veit Ranch Cabin	03-72								Cabin moved and interpreted in Thorpe Park
Weatherford Road	02-1259					x		x	
Strawberry Crater	02-79, 431-436							x	
B-29 Crash site	03-590	x						x	
Slate Lake Cave								x	
Winter Cabin								x	
Oldham Trail								x	
Andres Moreno Grave	04-74	x							
Baker Butte Lookout tower	04-36	x							

Table 5. Interpreted sites on the Coconino National Forest and method of interpretation

Coconino National Forest - Interpreted Sites									
Site	Site Number AR-03-04-	Sign / plaque	Register Box	Permitted Tours	Self- guided Brochure	Trail	On-site docents	In published guide book	Other
Long Valley Work Center	04-71	x							
Pivot Rock Canyon Cabin	04-91							x	
Lake Mary/Riordan logging		x							
Mormon Lake Dairy	05-68	x							
Dairy Springs		x						x	
Kelly Canyon Cabin	05-577							x	
Sycamore Canyon grave		x							
Dry Creek Roasting Pit	06-883			x					
Vultee Arch		x							
Van Deren Cabin	06-425		x	x		x			
A.B. Young Trail						x			Audio tape tour
Oak Creek Canyon									Audio tape tour
Soldier Canyon Grave	06-323	x							
Indian Gardens		x							
Palatki	06-54				x	x	x	x	
Honanki	06-58			x		x		x	
Red Cliff Pictographs	06-284-287				x		x	x	

Table 5. Interpreted sites on the Coconino National Forest and method of interpretation

Coconino National Forest - Interpreted Sites									
Site	Site Number AR-03-04-	Sign / plaque	Register Box	Permitted Tours	Self- guided Brochure	Trail	On-site docents	In published guide book	Other
Hartwell Canyon Site	06-57								Visits by appointm ent with Nature Conserva ncy
Hayden Family Grave	06-43	x							
Loy Canyon Trail								x	
Boynton Canyon Trail								x	
Overland Road Trail		x						x	
Secret Cabin								x	
Crescent Moon Ranch									Cabin Rental
G.D. Bantz Grave	07-104	x							
General Springs Cabin	07-110	x						x	Part of Cabin Loop Trail
Pinchot Guard Station	07-211	x						x	Part of Cabin Loop Trail
Aspen Springs Cabin	07-384							x	
Battle of Big Dry Wash	07-420	x						x	
Buck Springs Guard Station	07-898	x						x	
Cabin Loop Trail		x				x			
General Crook Road	01-240	x						x	

Table 5. Interpreted sites on the Coconino National Forest and method of interpretation

Coconino National Forest - Interpreted Sites									
Site	Site Number AR-03-04-	Sign / plaque	Register Box	Permitted Tours	Self- guided Brochure	Trail	On-site docents	In published guide book	Other
Blue Ridge Reservoir Dam		x						x	
Chavez Pass	07-20 & 21	x						x	
Fred Haught Trail								x	
Houston Brothers Trail								x	
Guide Book References:									
Coconino National Forest n.d. Recreational Opportunity Guide. Coconino National Forest, Flagstaff									
Mangum, Richard and Sherry 1993 Flagstaff Hikes (3rd Revised Edition) Hexagon Press, Flagstaff 12xx Sedona Hikes. Hexagon Press, Flagstaff									
Southwest Natural and Cultural Heritage Association 1990 Visitors' Guide: Coconino National Forest. Southwest Natural and Cultural Heritage Association, Albuquerque.									

The Forest has four major developed sites that are actively promoted for interpretation, recreation, and tourism, and all area accessible for walk-in visitation. In addition, Pink Jeeps, a commercial tour company, has the only permit to bring tour groups to Honanki, the largest cliff dwelling in the Sedona area. Its neighboring cliff dwelling, Palatki and Red Cliffs Pictographs, are operated by the Forest in cooperation with Friends of the Forest, a volunteer group, and provides on-site hosts to answer questions. V-V Heritage Site is the largest petroglyph site in the Verde Valley. It too is operated by the Forest in cooperation with the Friends of the Forest. Elden Pueblo is the Forest's flagship public archaeology project, and has been operated for public interpretation since 1980. It provides for walk-in interpretation as well as hands-on programs for the public, school children, and private groups in cooperation with the Arizona Natural History Association, the Arizona Archaeological Society, and the Museum of Northern Arizona.

In general, public visitation to these sites has been continually increasing since they were first made available to the public.

National Park Service visitor figures (U.S. National Park Service 2011) indicate the 1990's were the decade when attendance at National Parks and Monuments reached an all-time high (table 6). The decade of 2000-2010 found visitation fairly stable in the state of Arizona as a whole,

although differences are apparent when looking at National Monuments in the Verde Valley and Flagstaff areas. Attendance at Flagstaff area monuments (Walnut Canyon, Wupatki, and Sunset Crater) was higher than it was in the 1990's, but attendance was lower in the Verde Valley Monuments (Montezuma Castle, Montezuma Well, and Tuzigoot). However, visitation at Forest Service sites in the Verde Valley (Honanki, Palatki, and V-V Petroglyphs) increased (table 6). In fact, visitation to Palatki and Honanki, has increased to the point that it has just about maxed out the sites' capability to satisfactorily accommodate visitation demands. The trend to visit cultural sites is predicted to increase in the future, particularly as the Baby Boomer generation retires and has more time to spend in recreational pursuits (Arizona State Parks 2007).

Table 6. Visitation to Coconino National Forest Developed Archaeological Sites

Management Area	P R E D I C T E D S I T E D E N S I T Y			
	Low 1-10 sites /Sq. Mi.	Medium 11- 20 Sites/Sq. Mi.	High 21-30 Sites/Sq. Mi.	Very High 31+ Sites/Sq. Mi.
Painted Desert				100%
Ponderosa Pine Belt	100%			
San Francisco Peaks	80%	10%	10%	
Volcanic Woodlands	30%	20%		50%
Ft. Valley-Mt. Elden	50%		50%	
Flagstaff Neighborwoods	60%	40%		
Walnut Canyon	50%	40%		10%
Anderson Mesa	30%	10%		60%
Long Valley	100%			
Upper Clear Creek	90%	5%		5%
Verde Valley	15%	25%	15%	45%
Sedona-Oak Creek	5%		20%	75%
Sedona Neighborwoods - Sedona-Oak Cr.			40%	60%
Sedona-Oak Creek		5%	10%	85%
House Mt. Lowland Sedona-Oak Cr.	10%	30%	20%	40%

Although the Forest has many archaeological sites and areas that could be developed to accommodate such a demand, only one project has been proposed to prepare for it – the Sinagua Circle. This is a concept to provide integrated interpretation of approximately 20 sites in the Beaver Creek area that would interpret sites individually and collectively to illustrate the land use settlement patterns, and social relationships that existed in the Verde Valley during the Tuzigoot Phase, A.D. 1300-1400. It is based on government-private sector cooperation and would involve sites managed by the Forest Service, the National Park Service, Arizona State Parks, and the private sector, with individual sites sponsored by local business interests. A recent study by the Arizona Department of Tourism has found that prehistoric and historic sites are the most important resource the Camp Verde area has for enhancing its tourism economy. The Sinagua Circle concept is specifically designed to bring tourists into the Camp Verde area for both day

trips as well as longer visits to bring tourism dollars into the local economy. The Sinagua Circle has been approved as a formal capital investment proposal by the Southwest Regional Office of the Forest Service. However, funding for a NEPA evaluation and planning study is not proposed in the Forest's five year budget planning process and the future of the concept is uncertain.

Research

When sites are recorded in the Forest Service Site Survey System, they are assigned to one of twelve management classes that, upon initial evaluation, would seem to be the most appropriate value they have. These twelve categories can be summarized under four major categories:

Enhancement: Cultural resources that have the potential to provide educational, informational, or recreational benefits through interpretation, development, or tourism. This could include adaptive reuse as a historic administrative site or for public use through the USFS cabin rental program.

Preservation: Cultural resources that have scientific potential; are a rare or unique resource that is exceptionally unique, rare, or valuable; are important or sacred to a cultural group or a local community as a traditional use site or a Traditional Cultural Property.

Scientific Investigation: Cultural resources that may provide information about past human cultures and environments, either individually or as part of a broader research study, or that are suitable for experiments that have broad management benefits, such as testing various resource treatment techniques.

Released from Management: Cultural resources that have been withdrawn from Forest Service administration or ownership (such as through land exchange, transfer to another agency) or released from further management due to a negligible potential for enhancement, scientific, historic, or traditional values. This may be due to destruction by natural or human agency or because the resource has been scientifically documented or excavated to the extent that it is no longer of scientific, educational, recreational, social, or traditional value.

By far the most common assignment of sites is for scientific investigation. The most important value most sites have is their information potential to help understand how people have lived in the past, how they have responded to environmental and social stress, their social interactions, and how they have manipulated their environment to survive. Historically, scientific investigation in the Forest Service is the sole province of the research branch of the Forest Service rather than the day-to-day operational units, such as the Coconino National Forest. However, for heritage resources, such research is necessary in order to justify the time, effort, and money that is spent in locating, documenting, and preserving archaeological sites. On one hand, the rationale for preservation is obvious – no two archaeological sites are the same. Each is unique in its own way and archaeological sites are a finite resource. Unlike threatened and endangered species, or trees, we cannot grow or create another prehistoric archaeological site. Those we have now are all we will ever have. Consequently, the general approach is to preserve all sites, since we don't know now what we may be able to learn from them in the future. Archaeological research is always improving, and new technologies develop that allow us to learn things from sites that were never dreamed of in the past. For example, before 1930, archaeologists in the past would burn wood from cliff dwellings in their camp fires while they speculated on how old the sites were, not knowing that in a few short years tree-ring dating would enable them to date the precise year in which a tree was cut down and used to support the roof of the cliff dwelling. New techniques now

allow us to reconstruct past climates, date the last use of a firepit, know what kinds of plants people ate, their genetic relationships to other groups, and more – scientific findings that were unknown in the past.

Continued research is needed to realize what we can learn from archaeological sites and their value to the future. Archaeological research is not funded on the National Forests, but is conducted by some Forest archaeologists on their own as part of their professional responsibilities. Most research is done by museums and universities, or by contract archaeologists excavation of sites in advance of construction activities. The Coconino National Forest has hosted many research projects, for both academic and contract purposes. Field schools conducting archaeological survey and excavation projects have been done by Arizona State University, Northern Arizona University, the Museum of Northern Arizona, California State University at Sacramento, California State University at Fullerton, and Redlands University. Grinnell College, in particular, has been conducting research in the Flagstaff area since 1984.

One research related activity is conducting archaeological surveys in non-project areas to fill in gaps in survey coverage of the Forest. In so doing, more information is gathered about prehistoric land uses and settlement patterns. Several projects of this sort are being conducted by volunteers from the Arizona Site Stewards Program and the Verde Valley Chapter of the Arizona Archaeological Society. Four areas on the Forest are being examined by these volunteers. About 1.5 square miles have been intensively surveyed in the Youngs Canyon area. This survey contributes directly for expanding our knowledge about the settlements related to the Ridge Ruin National Historic District. Another survey is focused on the Sunset Pass area in the far northeastern part of the Forest. This area has not been examined in any detail by archaeologists and is the eastern boundary of the prehistoric Sinagua culture. Over 180 sites have been recorded in this area, providing new data on the relationships of the eastern Sinagua with the Mogollon and Cibola cultures. In cooperation with the Museum of Northern Arizona, the Verde Valley Chapter of the Arizona Archaeological Society has been conducting a survey of the Hackberry Basin/Little Sycamore Canyon locality for several years. Over 300 sites have been recorded thus far in the uplands of the Verde Valley that provide a valuable comparison to cultural developments in the more thoroughly studied Verde Valley itself. Arizona Site Stewards have recently undertaken a survey of the Deadmans Wash area to continue investigations into the long-standing question of the relationships of the Cohonina, Sinagua, and Kayenta in the cultural frontier near Wupatki National Monument.

Curation of Collections

Heritage Management Programs, by their very nature, result in collections – collections of artifacts, Forest Service memorabilia, old photographs, historic maps, historic records, site forms, books, etc. Small scale excavations are conducted for management studies, to salvage portions of sites being eroded away, to provide clearance for Forest Service projects, and testing to evaluate site significance. Artifacts are used for management studies, to evaluate the effects of fire or the use of different types of heavy equipment on vegetation removal projects, for example. Artifact collections are further augmented when the public or retired Forest Service employees turn over projectile points and artifact collections made “before it was against the law”. It’s also typical in pothunting cases that part of the perpetrators’ restitution is to return all artifacts they’ve illegally taken from public lands.

Artifacts resulting from these sources are generally bagged, put in boxes, and stored in whatever closet or corner of a warehouse is available, neither of which meets the curation standards of 36 CFR Part 79. Historic records, photographs, site records, and other paper documents are usually

kept in ever-increasing numbers of library shelves, files, and map cabinets, to the chagrin of administrators concerned about square footage costs they pay for office space. Keeping “old records” is generally contrary to federal filing directions, which dictate records are kept on file for five years, sent to the federal records center for another ten years, after which time they are destroyed. As with stabilization and repair, curation functions are not line items in the Heritage budget. Where will catalogue personnel and proper curation facilities come from to provide proper care for the materials the Heritage Program is charged to protect?

At the present time, the Forest has a Cost Share agreement with the Museum of Northern Arizona to be the repository for Forest artifact collections. Volunteers from the Verde Valley Chapter of the Arizona Archaeological Society are cataloguing and labeling artifacts from Forest survey and excavation projects to prepare them for curation at the Museum.

Tribal Relations

The Coconino National Forest regularly consults with 13 tribes about activities proposed on the Forest that may be of interest or concern to them. These include the Pueblo of Acoma, the Fort McDowell Yavapai Nation, the Havasupai Tribe, the Hualapai Tribe, the Hopi Tribe, the Navajo Nation, the San Carlos Apache Tribe, the San Juan Southern Paiute Tribe, the Tonto Apache Tribe, the White Mt. Apache Tribe, the Yavapai-Apache Nation, the Yavapai-Prescott Tribe, and the Pueblo of Zuni. Seven Navajo Chapters in proximity to the Forest – the Cameron, Coalmine Canyon, Dilcon, Gap-Bodaway, Leupp, Tolani Lake, and Tuba City Chapters – and the Dine’ Medicine Man’s Association, are also included in the Forest’s consultation process. Recently, the Forest has also assembled a Tribal Relations Task Force, composed of American Indian employees of the Forest, to provide Forest managers with their perspectives about Forest programs and activities. A Tribal Relations Specialist has also been hired to develop closer relations with the tribes and to provide an interface by which their needs and values can be better represented during Forest planning.

Although the 13 tribes often share the same perspectives on many Forest-related issues, it is important to remember that each group has its own unique set of beliefs and values that are different from those of mainstream America. Spiritual values are placed on events, people, places, and things that are often difficult to understand or quantify from the dominant cultural value system that is based on western European-centered perspectives. Many places and sites on the Forest are identified as “Traditional Cultural Properties” that are formally recognized as physical manifestations of the values and beliefs that give tribal people their identity as a people. These cultural values and beliefs are a living history for the tribes of this area and need to be sustained if the cultures of these First Americans are to survive into the future.

Each tribe has its own traditional cultural properties, but the San Francisco Peaks are a pre-eminent place that figures prominently in the cultures of all 13 tribes and is respected by many other tribes throughout the United States and Mexico. Forest Service activities and permitted uses of the mountain are of a special concern to tribes and development of the Arizona Snowbowl for skiing and winter sports has been a particularly contentious issue since the 1970’s. Most recently, a proposal by the Snowbowl to allow artificial snow-making using reclaimed water resulted in a lawsuit that had national repercussions to Forest Service-tribal relations. This decision has severely strained the former collegial relationships that had developed over the years between the Forest and the tribes.

Because of this, the Hopi have stated that the manner of consultation used in the past needs to be changed. This will likely result in modifications to the Memorandum of Agreement the Forest has with the Hopi Tribe and future Memoranda with other tribes. However, efforts are on-going to

rebuild relationships. The Hopi still look to the Forest to help them obtain trees from the general area of the Peaks that can be used to rebuild their kivas and local Navajo Chapters rely on Forest lands to acquire fire wood for domestic and ceremonial use. Special use permits continue to be provided at no charge to tribal members for the collection of boughs and plants for medicinal and ceremonial uses. The Forest is working closely with the tribes on two major initiatives, the Forest Plan Revision and the Forest Travel Management Rule, as a way to better understand tribal needs and strengthen relations. Consultation on these two items is confirming past uses of the Forest by the tribes and focusing attention to their continued needs for access and use of the Forest. With the proposed travel restrictions being considered by the Travel management Rule, several tribes are particularly concerned about its potential effect on fuelwood collecting and access to collect special plants for ceremonial and medicinal use. This is particularly important for elderly people, the main collectors of plants, whose age and physical condition makes collection dependent upon vehicular access.

Environmental Consequences and Cumulative Effects

The land management plan provides a programmatic framework that guides site-specific actions but does not authorize, fund, or conduct any project or activity. Because the land management plan does not authorize or mandate any site-specific projects or activities (including ground-disturbing actions), there can be no direct effects. However, there may be implications, or long-term environmental consequences, of managing the forests under this programmatic framework.

Common to All Alternatives

Project Clearances

All alternatives will deal with project clearance surveys, procedures, and mitigation measures, if needed, in the same way and therefore all alternatives will have the same effects as regards project clearance work. Cultural resource surveys for proposed actions will be conducted prior to approving site-specific projects in compliance with federal law and Forest Service policy. The Southwest Region's Programmatic Memorandum of Agreement will be used when making decisions concerning compliance with the various laws and regulations pertaining to the National Historic Preservation Act, 36 CFR 800 Sections 106 and 110, and related legislation. This includes tribal consultation, undertakings subject and not subject to consultation, determining areas of potential effect, levels of inventory, determinations of National Register eligibility, determinations of effect, and mitigation. Mitigation would most likely include avoidance of cultural resources by redesigning project boundaries, modifying implementation plans or excluding sites from treatments. When proposed activities would result in an adverse effect and avoidance cannot be accomplished, the adverse effect will be resolved in accordance with 36 CFR 800.

Most of the other unrealized objectives of the 1987 Plan have also been carried forward into Alternatives B, C, and D, without listing specific projects, including strategies for:

- Non-project related surveys to fill-in gaps in survey coverage and to focus on specific site types.
- Interpretation of additional sites

- Improve site and project monitoring
- Continue partnering with other agencies, institutions, tribes, and volunteer groups to achieve Heritage Program goals

Site Protection

To help protect and monitor the condition of archaeological sites, the Coconino National Forest has been an active participant since the beginning of the Arizona Site Stewards Program, which is administered by the Arizona State Historic Preservation Office. Volunteers are trained by the SHPO and land management agencies participating in the program and are then assigned archaeological sites by the land management agencies that the Site Stewards patrol. Reports are prepared for the agencies annually on their monitoring activities and immediately report recent site damage to the agency. At present, the Forest has about 200 sites that are patrolled by Arizona Site Stewards. The Forest's Elden Pueblo Project, in cooperation with the Museum of Northern Arizonan and the Arizona Archaeological Society, Flagstaff Chapter, also monitors sites as part of summertime children's camps, and as part of adult training sessions at other times of the year. Most of these patrols focus on National Register sites and involve relocating and updating site and condition records as part of the Forest's NHPA Section 110 and Programmatic Agreement obligations, as well as the Forest's own monitoring plan.

All alternatives continue the current management policy of a designated 200 ft. wide corridor on either side of the General George Crook Military Road National Recreation Trail and proposed National Historic Trail. Activities within that corridor would not disturb any intact segments of the trail and must enhance the late 19th century appearance of the Forest. All alternatives carry forward the direction to prepare a nomination for the road to the National Historic Trail System.

Enhancement and Interpretation

Alternatives A, B, C, and D have the same guidelines for future interpretive development of archaeological sites and training for commercial tour operators by Forest archaeologists. This provides an opportunity to periodically update tour interpretation to reflect new knowledge and ideas.

The Sinagua Circle is an interpretive concept that is designed to promote interagency cooperation in interpreting the cultural resources of the Verde Valley and, in so doing, to provide heritage tourism dollars into the Camp Verde area and contributing to the Department of Agriculture's rural tourism development program. A recent study of recreational opportunities for the town of Camp Verde identified prehistoric and historic cultural resources as the best "brand" by which they can increase their recreational income, and the town government, local businesses, Ft. Verde State Park, and Montezuma Castle and Well National Monuments have all enthusiastically agreed to participate in the project whenever it moves forward from the Forest Service. The potential for the Sinagua Circle to enhance interpretation at all three Monuments as a self-guided tour with associated resource materials is discussed in the Montezuma Castle-Tuzigoot National Monuments General Management Plan (U.S. National Park Service 2008:32, 139, 192, 213, 235) as a major benefit to increase interpretive diversity in telling the Sinagua story to the public as part of our NHPA Section 110 responsibilities.

With the high density of archaeological sites in Arizona, and the fact that 82 percent of land in the state is managed by governmental agencies (Arizona State Parks 2007:34), it is not surprising that there is considerable interfacing in the management of cultural resources. Prehistoric societies did not operate in a vacuum, nor do the land ownership boundaries of the present relate to those of

the past. Although agency missions differ, the Park Service and the Forest Service agree that interpretation of archaeological sites on both Park Service and Forest Service lands must be done within a regional context and as parts of larger cultural systems (U.S. National Park Service 2007:98, 99). There are six National Monuments within or adjacent to the Forest – Walnut Canyon, Sunset Crater, Wupatki, Montezuma Castle, Montezuma Well, and Tuzigoot – all of which are mandated to interpret the prehistoric Sinagua culture. Since most Sinagua sites are located on National Forest land, there is active cooperation between the Park Service and the Forest Service in their interpretive and site monitoring activities. The plans for Walnut Canyon National Monument to construct a new visitor center along Interstate 40 (U.S. National Park Service 2007:45) may lead to new opportunities to interpret the archaeological history of the Forest and display artifacts from the Forest’s collections, as is presently being done at both Tuzigoot and Wupatki National Monuments. Information realized from archaeological surveys on Forest land has been very important to the National Park Service as they designed new exhibits and interpretations for National Monuments in the Flagstaff and Verde Valley areas. Similarly, these same Monuments have conducted intensive surveys of their land, which has been very useful to the Forest for better predicting and understanding site distributions on the Forest. Some Park Service surveys have also been conducted on National Forest land which will be useful for future project planning.

Through an interagency agreement, the National Park Service in the Flagstaff area monitors sites on Forest land that are in proximity to Monument boundaries which helps us meet Regional, Forest, and USFS Region 3 Programmatic Agreement monitoring requirements. The Forest makes an effort to manage land adjacent to the Monuments to be compatible with Monument environments. Through the Regional Land Use and Transportation Plan of the City of Flagstaff and Coconino County, there is presently an on-going study to explore management options for a 30,000 acre area on the Forest around Walnut Canyon National Monument that could result in Park Service-Forest Service co-management of the area or another expansion of the boundaries of Walnut Canyon National Monument. As part of this study, the NPS has provided an archaeological survey of several hundred acres of Forest land which should be useful for future project planning as well as current land management actions.

The Forest actively assists the Park Service with its interpretive programs, training seasonal interpreters, and in the designing of new exhibits for both the Flagstaff and Verde Valley Monuments visitor centers. Exhibits at Tuzigoot and Wupatki National Monuments feature artifacts from the collections of the Forest, which besides making rare artifacts available for the public to see, helps the Forest with its artifact collections management. Through a cooperative agreement, Flagstaff Area Monuments and the Coconino National Forest share interpreters who work in both Park Service and Forest Service camp grounds and at permitted Forest recreational facilities such as the Arizona Snowbowl, providing a larger audience to be informed about National Forest management as well as interpretation of Forest, as well as Park Service, resources. Opportunities to increase interpretation of Verde Valley prehistory and expanded recreational opportunities for the public are also anticipated by the development of new multi-agency trails that connect Forest lands with Montezuma Castle, Montezuma Well, Tuzigoot, and Dead Horse Ranch State Park (U.S. National Park Service 2008:31,32, 58, 137, 139, 190).

Research and Curation of Collections

The Forest contains most of the territory occupied prehistorically by people named “Sinagua” by archaeologists, after the early Spanish name for the San Francisco Peaks, the *Sierra Sinagua*, “the mountains without water”. Besides providing cultural resources clearance for Forest projects, Forest archaeologists also cooperate with each other and the archaeological profession to

maximize the information and knowledge that can be obtained from archaeological sites under Forest Service administration. Archaeologists from a number of different universities and institutions come to work on the Forest due to the richness of its archaeological resources and their potential to contribute to significant issues in Southwestern archaeology. Such research allows various models of human response to changing conditions to be tested that may allow us to better predict responses today as we face some of the same challenges, such as climate change, natural resource depletion, population increases, societal friction, etc., faced by people in the past.

The Coconino National Forest has long-term research issues it is working on in cooperation with other Forests, as well as institutions. Questions concerning the recognition and distinction between Apache and Yavapai sites, as well as dating their appearance in the archaeological record, have been investigated by the Tonto, Prescott, Apache-Sitgreaves, and Coconino National Forests over many years. Lack of consensus by Southwest archaeologists on consistent identification and naming of projectile points has led to a joint project by the Kaibab and Coconino National Forests to develop a standardized typology that it is hoped will be adopted as a standard for at least the Forests and institutions in northern Arizona. The effect of standardizing such a typology would result in consistency between the Forests of northern Arizona, and the academic and contract archaeologists that work on those forests, similar to the consistency in use of prehistoric pottery identifications. Confusion as to time, culture, and origin of points and the sites where they are found would be greatly reduced and would result in a more comprehensible understanding of several thousand years of prehistory in northern Arizona.

No alternative specifically addresses the curation of Forest artifact collections with standards and guidelines. However, the Forest has a challenge-cost share agreement with the Museum of Northern Arizona and a program with the Arizona Archaeological Society Certification Program to train avocational archaeologists on how to catalogue Forest collections and prepare them for curation at the Museum. This supports the Heritage desired conditions in Alternatives B, C, and D of developing agreements with repositories to curate records and artifacts and to develop creative management opportunities, such as this partnership between the Museum, the Forest, and the Archaeological Society.

A significant question in Southwestern archaeology concerns the extent of social complexity that was present in the prehistoric Southwest. Common wisdom has historically presented a picture of egalitarian societies, but a growing number of archaeologists question this assumption. Early work by Arizona State University at Chavez Pass was directed to this question, which continues today with the work of the Forest at Elden Pueblo and at several sites investigated by Grinnell College. Outstanding work in refining the climatic history of the Flagstaff area and prehistoric responses to climate change has been done by a private research company, Desert Archaeology, in cooperation with the Laboratory of Tree-ring Research at the University of Arizona. Responses of populations to hazardous situations, such as volcanic eruptions, have long-been studied on the Forest since the 1930's when it was first recognized that Sinagua were living in the area when Sunset Crater erupted in the late 1000's. This has classically been interpreted to have resulted in a prehistoric land rush to take advantage of new farming areas produced by the eruption, making Flagstaff a cultural "frontier", especially in the Wupatki area on the north end of the Forest. Archaeologists at Northern Arizona University are particularly interested in the social dynamics of this concept and how ethnicity can be recognized in the archaeological record.

It is generally acknowledged that the Hopi are the main descendants of many of the prehistoric Puebloan people of the northern Southwest, as they themselves acknowledge. Hopi identify the presence of their prehistoric ancestors by oral traditions and different petroglyphs that are recognized as clan symbols. Increased interest in using petroglyphs as archaeological data, rather

than art, has led to recent research by the University of Redlands on the distribution of petroglyph clan symbols in comparison with Hopi oral traditions of where clans came from. The Verde Valley is one of the most fertile and productive agricultural areas in the state. Yet, like most of the Southwest, it seems to have been abandoned by its prehistoric inhabitants by 1400. Historically, abandonment of such large areas has been attributed to a variety of causes, such as warfare, disease, and, typically a “Great Drought” about 1278. Recent research now shows that prehistoric people were able to survive through several droughts before then and argue that even with such drought, the Verde River and its tributaries would not have gone dry and that it does not make sense that prehistoric farmers would leave so productive an area due to drought alone. This remains one of the big mysteries in Southwest archaeology and has direct implications for understanding human responses to climate change, population changes, and reduction of environmental resources.

These are only some examples that illustrate the significance of the archaeological remains on the Coconino National Forest and the considerable interest it has for the archaeological profession. The conservation (“wise use”) of this limited and irreplaceable resource is the primary purpose for the Forest Service Heritage Program.

The continuing involvement of the Coconino National Forest archaeology program in promoting and encouraging archaeological interest in the area will continue to enrich our knowledge of the past, human society, and population responses to climate change. The plan in Alternatives B, C, and D to begin evaluating archaeological site types by archaeological localities will directly benefit the Forest’s ability to continue attracting institutions to the Forest to investigate its prehistoric past for the knowledge, enrichment, and edification of the American public.

As archaeological knowledge and information increases on the Forest, it will result in more accurate and better archaeological interpretation not only for the Forest Service, but also for other agencies and individuals who are in the business of interpreting archaeological sites, such as museums, the National Park Service, Arizona State Parks, tour operators, guides, writers, photographers, etc. Opportunities for partnership with these groups can increase public awareness of site etiquette, the laws protecting archaeological sites, as well as the potential for mutual and coordinated interpretation across agency lines.

Collectively, the archaeological activities of the Forest, the National Park Service, Arizona State Parks, City of Flagstaff, museums, universities, business concerns, public and private groups, interpretive, protection, and recreational opportunities are being enhanced for of all parties involved. Greater archaeological knowledge of the region is being assembled and used for many scientific, business, and land management purposes.

Tribal Relations

The importance of tribal relations, sensitivity to tribal needs, and providing Forest products are prominent in the current plan, Alternative A, and have been carried over into Alternatives B, C, and D. Consequently, they would have the same effect on tribal relations. A policy, currently being drafted jointly by the Coconino and Kaibab National Forests clarifies and provides authority under which tribes may collect forest products under a free-use permit. This should eliminate confusion and misunderstandings between native practitioners and Forest Service personnel about who, what, and under what conditions forest products can be collected for traditional and ceremonial purposes. This should promote the Forest’s desired conditions for tribal relations by providing a consistent approach between Forests when dealing with the tribes, providing improved accessibility for traditional practices, and the potential for developing creative management opportunities between tribes and the Forest.

Alternative A

Alternative A, the 1987 Plan divides the Forest into 38 Management Areas (MAs) based on vegetation and environment with three additional designations (Administrative Sites, Navajo Army Depot at Bellemont, and electronic sites). Issues, goals, and Desired Future Conditions are identified that pertain to the entire Forest as well as for each MA. Standards and Guidelines, objectives, and management emphasis are presented by which to evaluate how well issues are resolved, goals are met, and to provide direction for future management. It identifies specific actions, projects, and locations to be addressed and accomplished during the life of the Plan. The 1987 Plan has been amended 23 times, with each revision providing more detailed study and evaluation of different regions of the Forest and providing more specific projects and direction than presented in the original plan.

For Heritage Resources, many of the specific items addressed in the Plan have been accomplished, partly accomplished, are no longer priorities for the program, or new procedures have been implemented and are on-going to address issues identified in the Plan. Other actions or projects have not been accomplished. Some examples of these categories are:

Accomplished

- Develop Elden Pueblo and Palatki as interpretive sites
- Stabilize Honanki, Palatki, Elden Pueblo
- Develop Lime Kiln Trail
- Acquire property whose development could detract from scenic and Wilderness values or impact historical/cultural values. (Bradshaw, Hancock, and Wu Ranches)
- Interpretive signs installed along U.S. Highway 180
- Increased use of volunteers
- Boughs and plants are available to Indians for ceremonial purposes with minimal restrictions
- Consult tribes on projects on the San Francisco Peaks
- Require Forest Service-approved training for permitted commercial guides on cultural and natural history, site etiquette, and Forest Service missions and goals.
- Document cliff dwellings and rock art sites
- Expand personal contact between interpreters and visitors at cultural sites
- Continue monitoring of sites for impacts from recreation, grazing, firewood cutting and other human uses. Cooperate with Park Service personnel to accomplish monitoring
- Manage the General George Crook trail and associated historic sites and side trails for potential designation as a National Historic Trail.

Partly Accomplished

- Sites listed on or eligible for the National Register are regularly monitored
- Monitoring during and after project implementation to document site protection
- Inventory historic trails and wagon roads for possible use as non-motorized trails

- Complete cultural surveys of all Forest system trails
- Provide full-time hosts at Honanki, Palatki, Boynton Canyon, and other significant interpretive sites
- Manage to protect the values of Walnut Canyon National Monument and complement National Park Service goals for the Monument.
- Renovate Van Deren Cabin to its historic condition. Operate it as a “living museum” to reflect ranching history. Provide sanitation facilities, interpretation and access.
- Collaborate with the Nature Conservancy and Archaeological Conservancy to protect cultural and biological resources in the vicinity of Hartwell Canyon
- Maintain or construct mile markers and inter-visible rock cairns along General George
- Crook Trail. Maintain cooperative agreement with Arizona State Parks for maintaining roadside markers at 13 Mile Rock and related trailhead parking. Design and install interpretive signs at Clear Creek Campground that relate to local historic value of the trail. Study development potential of interpretive handicapped facilities for trail near Clear Creek Campground.

Not Accomplished

- Prepare National Historic Trail nomination for General George Crook Road
- Post sites adjacent to private land
- Eliminate effects of aircraft on cultural resources
- Focus archaeological surveys on Long Canyon, Boynton Pass, the Cockscomb and Doe Mountain
- Interpret Chavez Wagon road and Stage Stop
- Interpret the Molina homestead
- Survey promontories and major tributaries, including Coffee Creek
- Complete 100% archaeological survey of the Forest by 2000

With the exception of a National Historic Trail nomination for the General George Crook Road, the objectives in the “Not Accomplished” category are by and large no longer considered priorities.

Site Protection

Although the specific locations identified above are important areas needing survey, they are not considered to be the highest priorities for survey when considered on a Forest-wide basis. The same is true for interpreting the Molina homestead – from a Forest-wide perspective, there are other sites that are a higher priority for interpretation. Preliminary studies at Grand Canyon National Park have concluded that sites are not damaged by the proximity of aircraft. The Beaverhead Stage Stop has had an interpretive plaque for many years and initial efforts have been made to develop the Chavez Wagon Road. And lastly, completing a 100% survey of the entire Forest by 2000, given historic funding levels, was ingenuous, even in 1987.

Protection of National Register sites from mineral and energy developments was achieved under the current plan by successfully removing specific National Register sites and districts from mineral entry. While generally serving their purpose, several withdrawals were drawn incorrectly and excluded some of the major sites they were designed to protect. However, those withdrawals were only valid for 20 years and have since expired. In addition, Alternative A does not provide criteria to identify or evaluate other significant sites and areas for protection that could be afforded them by mineral withdrawal. Approximately 95 sites are presently protected by being within the boundaries of the San Francisco Peaks Mineral Withdrawal area that resulted from the White Vulcan Mine settlement agreement in 2000. Alternative A identifies future geothermal site development as a concern that could cause conflicts with other resources and uses but has no clear direction on how to consider these resources as part of leasing decisions. This is particularly true for the north end of the Forest, which has been identified as a potential geothermal development area, but does not otherwise address the issue.

Enhancement and Interpretation

Although Alternative A identifies specific sites for interpretation and development, it does not provide a mechanism to evaluate how well those sites meet public expectations, what experiences are not provided for visitors by those sites, what to do when demand exceeds the capacity of existing developed sites, or what to consider for long-term planning of developed archaeological sites. Alternatives B, C, and D recognize the Sinagua Circle as a concept that addresses these points by providing for the phased development of a number of sites that can be added onto as needed to meet interpretation or visitation issues. It is based upon a private/government cooperative approach to provide an integrated interpretation of sites on private, State, Forest Service, and National Park Service lands.

Alternative A does not address the Route 66 Historic All-American Road or the need for interpretive facilities that support its unique heritage needs and has no mechanism to identify and consider new sites for interpretive development. Consequently Alternative A has no provisions for increasing the number of archaeological sites on the Forest that can be made available for the public education and enjoyment.

The objective of providing opportunities for public involvement in archaeology has been successful, but almost too successful. Volunteer participation in Heritage Program activities has reached a point where current Heritage staffing is inadequate to maintain training, supervision, and documentation of the results of volunteer projects.

Alternative A requires commercial tour guides to archaeological sites in the Sedona area to have Forest Service approved training in site etiquette, prehistoric culture history, the mission of the Forest Service, and the interpretation of the sites to which they are permitted to take tour groups. It also requires commercial tour operators on the Forest to coordinate their tours with National Park Service Monuments in the Flagstaff area to ensure archaeological interpretation and information about agency missions are comparable. Patrolling sites as a separate activity, and monitoring them during and after project implementation, is called for in the 1987 Plan. Enrollment of almost 200 sites in the Arizona Site Stewards Program and site recording projects by the Arizona Archaeological Society is doing well to monitor sites. Monitoring associated with project activities happens, but is haphazard and is not always documented.

Research and Curation of Collections

Alternative A has no provision to analyze, summarize, and evaluate the results of hundreds of archaeological surveys and thousands of sites that have been recorded by the Forest's archaeological program. Sites are simply identified, documented to whatever standard has been current at the time, and generally avoided by project activities. The numbers of sites amassed continues to grow, but our knowledge and understanding of those sites, and their relative significance for understanding the human experience they represent, has not kept pace. Site "management" has become a routine process of "locate, flag, and avoid." Period! Research is needed to have a better understanding of what we have, how sites relate to one another, what makes them significant, why they should be protected, and how to prioritize our limited resources to best realize and protect their significant values. The results of such an analysis would provide for more substantial, well-reasoned nominations of sites and districts to the National Register of Historic Places. Nominating significant cultural resources are required by law under all proposed alternatives.

Alternative A does not address major issues for Heritage Management that have developed over the past 24 years. It does not mention collections management, and the need to have Forest artifact collections properly catalogued and curated by a repository that meets current curation standards.

Tribal Relations

Efforts to improve Tribal Relations would continue to be an important focus under this alternative.

To summarize Alternative A, most of the objectives for Heritage Resources Management highlighted in the 1987 Plan have either been accomplished, have become standard operating procedures, have been addressed by new laws, regulations, and agreements, or are no longer significant issues. What is now needed are new directions and ways for the Heritage Program to build upon its past accomplishments to gain a better understanding of what we are protecting and how they can contribute to the mission of the Forest Service over the next 20 years.

Alternative B

Project Clearance

Alternative B does not repeat law, regulation and policy pertaining to project clearances, site protection, enhancement and interpretation, research, or curation of collections, or tribal relations. However, it does provide strategic direction on the desired outcomes for the Coconino that would result from implementation of these regulations. For example, a proposal common to Alternatives B, C, and D establishes an objective of making a comprehensive site class evaluation of the approximately 30 site types that are found on the Forest. Ideally, this would be done over a ten year period, but with uncertain future funding, the immediate objective is to evaluate at least three site types every ten years, with priority being placed on site types that are most susceptible to being damaged by fire, such as log cabins, petroglyphs, pictographs, and sites with wood or other perishable remains. This would be done by dividing the Forest into archaeological study units, or "localities", that past work suggests have an internal, cultural cohesiveness through time. Site types within each locality would be studied to determine the functions they may have had through time and their place in the prehistoric land use system in that locality. Site types would be summarized to determine how unique or common they are in each locality, and any unique characteristics that may distinguish them. By examining each site type as a class, and within

specific localities, a better understanding of how sites functioned within their cultural and environmental settings would result. This would establish a context by which individual sites and areas could be better evaluated and managed for their research, tribal, and National Register significance. Priorities could be established for protection, stabilization, and interpretation based upon their importance for understanding the prehistory and history of the Forest.

Site Protection

Alternatives B, C, and D recognize a need for pro-active work in interpretive development, stabilization, monitoring, and non-project inventories to continue but do not provide specific priorities or direction on how such work may be done. Sites in need of stabilization, suitable for interpretation, listed on the National Register, National Historic Landmarks, or of some other special nature are identified in the Forest's INFRA database as "Heritage Priority Assets" and provides a method for identifying such sites as special management categories when opportunities are available for interpretation or preservation. Rather than relying on a static list, as proposed in Alternative A, where priorities could change due to changes in site condition, such as a forest fire wiping out a priority log cabin for stabilization, Alternatives B, C, and D provide the flexibility and ability to use the Heritage Priority Assets function to sort through high-value sites to determine priorities when new funding or opportunities arise to realize Heritage desired conditions for site interpretation and preservation.

Alternatives B, C, and D provide guidelines for energy and minerals that would help protect archaeological resources and traditional cultural properties by prohibiting leasing and surface occupancy, or withdrawing from mineral entry, areas of very high archaeological site density, site significance, and traditional cultural properties as well as in Research Natural Areas, Wilderness Areas, and the San Francisco Peaks. The Strawberry Crater Wilderness is within the potential geothermal development area. Adding another 6,611 acres to it, proposed by both Alternatives B and C, would protect an estimated 320 sites from impacts by potential geothermal development.

As the population of Arizona continues to increase, there will be an increased demand for energy to serve that population and there are region-wide planning efforts taking place for a transmission line grid system to transport and direct energy to different parts of the western United States as needed. With the burgeoning growth of Phoenix, the Coconino National Forest is right in the middle of likely transmission line routes, such as the currently planned Grapevine Canyon wind generating project, east of Flagstaff. Alternatives B and C, but particularly Alternative C with its emphasis on new Wilderness and Research Natural Areas, would place restrictions on the construction of power lines through the south end of the Forest, an area of very high archaeological site density, and would protect as many as 3,828 sites from direct and indirect impacts caused by transmission line construction.

Alternative B, as well as C and D, also calls for special area designations. Special areas include wilderness, botanical, geological, and Research Natural Areas. These designations are given to places of outstanding cultural, biological, geological, or scenic value. They are managed with the intent of preserving and enhancing those values. To do this, special area designations have a number of management requirements that also contribute to the protection of cultural resources by minimizing developments, access improvements, and commercial uses. Natural processes are encouraged with a minimum of human interference. While specific restrictions may vary, depending upon the type of special area designation, they include no logging, no roads or motorized vehicle access, no camping, no large groups and no events or commercial tours unless they support the resources for which an area was established. Where needed, habitat restoration is

encouraged as well as the establishment of natural fire regimes. By minimizing surface disturbing activities and the size of recreating groups, the potential for site damage is also minimized.

Alternative B proposes the designation of seven specific special areas:

- Expansion of the Strawberry Crater Wilderness Area
- Expansion of the existing Fossil Creek Wilderness Area with Davey's Wilderness
- One new wilderness area - Walker Mt. Wilderness
- Expansion of the San Francisco Peaks Research Natural Area
- Two new research natural areas - West Clear Creek and Rocky Gulch
- The Cottonwood Basin Fumeroles Geological Special Area,

Most of these proposed special areas have very high archaeological or cultural significance (table 7).

Table 7. Heritage Evaluation of Proposed Wilderness and Special Area Designations

Heritage Evaluation of Proposed Wilderness and Special Areas									
Alternatives	Area	Site Density	Known Sites	Site Types	Proposed Acres	Acres surveyed	% of Area	Estimated Sites *	Comments
B, C	Strawberry Crater Wilderness Expansion	Very high, 31+ sites /Sq. Mi.	35	Field houses, agricultural fields, 5-8 room pueblo, 10-12 room pueblos 9-12 room pueblos	6,611	400	6.0%	320	
C	Abineau Wilderness Area	Low, 1-10 sites /Sq. Mi.	2	Historic, 2 room pueblo	415	70	16.9%	3	
C	Barbershop Wilderness Area	Low, 1-10 sites /Sq. Mi.	0	None	1,305	10	0.8%	10	
C	Black Mountain Wilderness Area	Very high, 31+ sites /Sq. Mi.	22	Field houses, agricultural fields , 8-12 room pueblo, roasting pit	9,774	20	0.2%	473	
C	Cedar Bench Wilderness Area	Very high, 31+ sites /Sq. Mi.	5	Field houses	5,782	15	0.3%	280	
C	Cimmaron-Boulder Wilderness Area	Very high, 31+ sites /Sq. Mi.	60	Artifact scatters, agricultural fields, field houses, fort, 5-8 room pueblo, 8-12 room pueblo, 20+ room pueblo,	15,305	40	0.3%	741	

Table 7. Heritage Evaluation of Proposed Wilderness and Special Area Designations

Heritage Evaluation of Proposed Wilderness and Special Areas									
Alternatives	Area	Site Density	Known Sites	Site Types	Proposed Acres	Acres surveyed	% of Area	Estimated Sites *	Comments
B , C	Davey's Wilderness	Very high, 31+ sites /Sq. Mi.	10	Field houses, agricultural fields, petroglyph, 5-8 room fort	1,779	100	5.6%	86	
C	Deadwood Draw Wilderness Area	Very high, 31+ sites /Sq. Mi.	46	Field houses, artifact scatters, agricultural fields, cliff dwelling, historic	11,785	330	2.8%	571	
C	East Clear Creek Wilderness Area	Low, 1-10 sites /Sq. Mi.	2	Lithic scatter, field house	2,017	0	0.0%	16	
C	Hackberry Wilderness Area	Very high, 31+ sites /Sq. Mi.	55	Artifact scatters, Field houses, pit houses, fort, agricultural fields, 5-8 room pueblo, 8-12 room pueblos	26,044	130	0.5%	1,261	
C	Tin Can Wilderness Area	Moderate, 11-20 sites /Sq. Mi.	7	Forts, pit house, field house , 5-8 room pueblo	3,972	15	0.4%	93	
B, C	Walker Mountain Wilderness	Very high, 31+ sites /Sq. Mi.	31	5-8 room pueblo, forts, 5-8 room pueblos, 13-20 room pueblo,	6,377	20	0.3%	309	

Table 7. Heritage Evaluation of Proposed Wilderness and Special Area Designations

Heritage Evaluation of Proposed Wilderness and Special Areas									
Alternatives	Area	Site Density	Known Sites	Site Types	Proposed Acres	Acres surveyed	% of Area	Estimated Sites *	Comments
B, C, D	Cottonwood Basin Fumeroles Geological Special Area	High, 10-29 sites/Sq. Mi.	0	None	217	8	3.7%	7	
C	Cottonwood Basin Fumeroles Botanical Special Area	High, 10-29 sites/Sq. Mi.	11	Field houses, pit houses, artifact scatters	1,633	50	3.1%	51	
B, C, D	San Francisco Peaks Research Natural Area Expansion	Low, 1-10 sites/Sq. Mi.	0	None	60,898	0	0.0%	95	Within San Francisco Peaks Traditional Cultural Property. Sites already protected by White Vulcan Withdrawal
B, C, D	West Clear Creek Research Natural Area	Very high, 31+ sites /Sq. Mi.	0	None	1,007	31	3.1%	49	
B, C, D	Rocky Gulch Research Natural Area	Low, 1-10 sites/Sq. Mi.	0	None	926	360	38.9%	7	
	TOTAL:		286		155,847	1,599	1%	4,373	

* Estimates based on predicted site density class, 31 sites/ sq. mi. in Very High density areas, 20 sites/sq. mi. in High density areas, 5 sites/sq. mi. in Low density areas, reduced to 1/ sq. mi. for San Francisco Peaks based on steep terrain and past surveys

Potential Sites Protected by Wilderness and RNA Designations

Alt. A	95 **	Alternative C	4,277
Alt. B	778	Alternative D	63

** 95 predicted sites currently withdrawn by the San Francisco Peaks/Mount Elden Recreation Area Mining Withdrawal

The expansion of the San Francisco Peaks Research Natural Area (also proposed in Alternatives C and D) is within the San Francisco Peaks Traditional Cultural Property area and Kachina Peaks Wilderness. There would, therefore, be no effect to cultural sites or areas of cultural importance because the TCP and Wilderness area are more restrictive than the RNA designation.

The Strawberry Crater Wilderness (also proposed under Alternative C) includes places of traditional cultural importance to the Hopi and Navajo. The current Wilderness Area and the proposed expansion contain many sites that are important for understanding the cultural frontier of the Wupatki-Deadman Wash area. Although only six percent of the proposed expansion area has been surveyed, 35 sites are already documented in the area, supporting a “Very High” archaeological site density prediction (table 7).

The proposed Walker Mountain Wilderness (also proposed in Alternative D) and Davey’s Wilderness (also proposed in Alternative C), and West Clear Creek Research Natural Area (Also proposed in Alternatives C and D) are in the Verde Uplands in areas of known very high archaeological site density. Although less than one percent of the area encompassed by these proposed Wilderness areas has received systematic archaeological inventory (Table 7), it has been investigated over several years by volunteers from the Arizona Archaeological Society, Verde Valley Chapter, who have recorded over 300 sites in the area. Although the prehistory of the Verde Valley is not well known, the Verde Uplands is even more poorly understood. The sites recorded by the Verde Valley Chapter include a diverse range of site types that span most of the known occupation of the Verde Valley itself and indicate great potential for understanding the ways people responded to climate and social changes over the centuries in two geographically close, yet very different, environments.

The Cottonwood Basin Fumeroles Geological Special Area is within the Verde Valley lowlands. Although proposed for its unique geological formations, it also has a high site density (table 7).

The Rocky Gulch Research Natural Area is in the low site density ponderosa pine zone. Although low in prehistoric sites, it has a potential for some historic period sites (table 7).

Altogether, the two Wilderness Area expansions, two new Wilderness Areas, two new Research Natural Areas, and one new Geological Special Area proposed in Alternative B would provide improved protection for 77,815 acres, 76 known sites, and 873 predicted sites (table 7).

Procedures for providing cultural resources clearance for projects under Alternative B would be the same as for other alternatives – they would follow the legal process of 36 CFR 800 as agreed to in the Southwest Region’s Programmatic Agreement with the Advisory Council on Historic Preservation and the SHPO’s of the states represented in the region.

Alternatives B, C, and D are more restrictive than Alternative A in that there will be no overnight camping or camp fires within Research Natural Areas. This provides some additional protection of sites from potential looters, who frequently work under the cover of darkness, and fires caused by untended camp fires, a common cause of destructive wild fires.

Enhancement and Interpretation

Alternative B recognizes the niche the Coconino National Forest has for historic sites and trails as a dispersed recreational resource. It proposes increased development of trails to respond to public demands but such development could put more sites at risk from trail maintenance activities or providing access to sites and high density archaeological site areas. Alternatives B, C, and D call for interpretive facilities at trailheads and protection of historic trail/road segments that might be suitable for interpretation. These alternatives also recognize the need for interpretation of the Historic Route 66 All-American Road, several segments of which occur on the Forest but are not

identified or interpreted. Should interpretive development be considered, these three alternatives are the same in that they will follow the Arizona Department of Transportation's Comprehensive Plan for historic Route 66. Interpretive development of Route 66 would result in additional cooperative opportunities through the Route 66 Scenic Byways Association and the Kaibab National Forest that already interprets several segments of the old road. All alternatives recognize the charge to nominate the General George Crook Road to the National Historic Trails System.

Alternatives B, C, and D have adapted direction from the Sedona-Oak Creek MA in alternatives A related to commercial tours of archeological sites to pertain to the entire Forest. Providing commercial guides with site etiquette and archaeological site interpretation helps build partnerships with the private sector and provides the public with additional information about site protection and the importance of archaeological sites on the National Forest.

Research and Curation of Collections

Under alternative B, the evaluation of site types would contribute to the understanding of heritage resources in Northern Arizona.

Alternative B specifically addresses the appropriate management of collections for research purposes in desired conditions.

Tribal Relations

Tribal Relations would also be the same for Alternative B as with the other alternatives – they would follow 36 CFR 800 procedures as defined by Regional policies and tribally specific agreements.

From a Tribal Relations perspective, Alternatives B, C, and D, but particularly C, are better because the Special Area designations proposed for each would not only protect archaeological sites, but several traditionally important locations - the San Francisco Peaks in particular, and also the proposed Cottonwood Basin Fumeroles Geological Special Area. All alternatives continue the policy of respectful consultation with tribes. Alternatives B, C, and D further promote cultural preservation by maintaining the shape, form, and condition of cinder cones outside the Cinder Hills OHV area and by recognizing the cultural importance of certain forest products. Its provision to support long-term research and streamlining research permit procedures could encourage more institutional archaeological work to better understand the cultural resources of the Forest.

Alternative C

Alternative C has the same environmental consequences as alternative B for project clearances, enhancement and interpretation, research, or curation of collections, and tribal relations. In addition, it considers increases in the amount of wilderness and special areas, as well as increased opportunities for quiet, semi-primitive recreation. Special area designations are increased to 17 (table 7) and propose:

- Expansion of the San Francisco Peaks Research Natural Area (also proposed in Alternatives B and D).
- Two new Research Natural Areas – Rocky Gulch and West Clear Creek (both also proposed in Alternatives B and D)
- Expansion of the Strawberry Crater Wilderness Area (also proposed in Alternative B)

- Five new Wilderness Areas – Barbershop, Cimarron-Boulder, East Clear Creek, Hackberry, Walker Mountain (also proposed in Alternative B)
- Expansion of existing Wilderness Areas with Abineau, Black Mountain, Cedar Bench, Davey's (also proposed in Alternative B), Deadwood Draw, Tin Can Wilderness Areas,
- Cottonwood Basin Fumeroles Geological Special Area, (also proposed in Alternatives B and D),
- Cottonwood Basin Fumeroles Botanical Special Area

Site Protection

Abineau, Barbershop, and East Clear Creek Wilderness Areas have low predicted site density. Very few prehistoric sites and a few historic period sites would be expected. Tin Can Wilderness area is in a moderate site density area and mostly prehistoric sites are expected to be found in it. Black Mountain, Cedar Bench, Cimarron-Boulder, Deadwood Draw, Hackberry, and Walker Mountain Wilderness Areas all have a very high site density prediction. Although less than half of one percent of the proposed Hackberry Wilderness Area has been surveyed, 55 sites are known to be in its boundaries. Similarly, Only 0.3 percent of the proposed Walker Mountain Wilderness has been surveyed, but 31 sites are already known (table 7).

Altogether, the expansion of one wilderness area, 11 new wilderness areas, expansion of one research natural area, two new research natural areas, one new geological special area, and one new botanical special area proposed in Alternative C would provide improved protection for 155,847 acres, 286 known sites, and 4,372 predicted sites (table 7).

Procedures for providing cultural resources clearance for projects under Alternative C would be the same as for other alternatives – they would follow the legal process of 36 CFR 800 as agreed to in the Southwest Regions Programmatic Agreement with the Advisory Council on Historic Preservation and the SHPO's of the states represented in the region.

Alternative D

Alternative D has the same environmental consequences as alternative B for project clearances, enhancement and interpretation, research, curation of collections, and tribal relations. As for site protection, alternative D considers fewer restrictions on human access through the designation of special areas and use of the Forest and its resources. It only considers:

- Expansion of the San Francisco Peaks Research Natural Area (also proposed in Alternatives B and C)
- Two new research natural areas: West Clear Creek and Rocky Gulch (both also proposed in Alternatives B and C)
- Cottonwood Basin Fumeroles Geological Special Area, (also proposed in Alternatives B and D)

Site Protection

Altogether, the expansion of one natural area and two new research natural areas proposed in Alternative D would provide improved protection for 63,048 acres. Although there are, no known sites, these areas have the combined potential to have approximately 158 sites (table 7).

Cumulative Effects

Continued growth, with concomitant changes in the cultural, social, and economic base of the area, is predicted for the near future of Yavapai and Coconino Counties. As these local populations increase, additional pressure for space, water, power, and additional infrastructure will result on additional pressures on the Forest as well. This will impact the borders, integrity, and biodiversity of federal lands surrounding such growing communities as more homes are built adjacent to Forest lands and a higher concentration of visitors travel to favored Forest destinations, including visits to archaeological sites.

As noted previously (Table 4) roads are the single most source of damage to sites on the Forest, effecting 20% of all recorded sites. Roads also often provide easy access to sites by vandals and looters. Every large, post A.D. 1300 pueblo on the Forest has been dug in extensively by pot hunters, and most have roads in close proximity to them. Implementation of the Travel Management Rule will not only reduce the number of roads on the Forest, but will also prohibit off-road driving. The combination of these two actions will have a long term beneficial effect that will contribute to the heritage desired condition of protecting archaeological sites by minimizing impacts from visitors, inadvertent damage from off-road vehicles, vandalism, and pot hunting.

The Forest is working with the City of Flagstaff Historic Preservation Office to develop a site density prediction model they can use to assist in future development planning. They are considering the adoption of the model developed by the Forest that is based upon environmental variables as reflected in the Terrestrial Ecosystem soils classification system (Miller *et al.* 1995). Using a model similar to the Forest's should help improve planning for both agencies for managing programs and activities in the interface between Forest and City lands.

Alternatives B and C, but particularly Alternative C with its emphasis on new Wilderness and Research Natural Areas, would place restrictions on the construction of power lines through the south end of the Forest, an area of very high archaeological site density and site significance, and would protect as many as 3,828 sites from direct and indirect impacts caused by potential transmission line construction.

The Forest strives to manage for "no effect" or "no adverse effect" for all proposed projects and on-going management activities, and this would continue into the future, as guided by law, regulation, and policy and the Region's Programmatic Agreement with three State Historic Preservation Officers and the Advisory Council on Historic Preservation.

The Coconino, Kaibab, Apache-Sitgreaves, and Tonto National Forests are currently planning the Four Forest Restoration Initiative (4FRI), a project that would last for decades. It provides for the removal of massive quantities of small-size timber and combustible forest floor litter through the use of prescribed fire and mechanized vegetation removal. A protocol for determining archaeological survey intensities relative to expected amounts of ground disturbance and predicted archaeological site densities has been prepared and has received concurrence from the Arizona SHPO and should result in no adverse effect to cultural resources on all four Forests by project activities. Implementation of this project would have positive effects for archaeological resources throughout the forested area of north-central Arizona by requiring additional, large-scale archaeological surveys, which should result in improved scientific and management information for future Forest projects on all Forests. It would also be beneficial by removing the combustible material that contributes to catastrophic forest fires that result in deleterious effects to cultural resources.

Relationship of Short-Term Uses and Long-Term Productivity:

Unavoidable Adverse Impacts

The land management plan provides a programmatic framework that guides site-specific actions but does not authorize, fund, or conduct any project or activity. Before any ground-disturbing actions take place, they must be authorized in a subsequent environmental analysis. Therefore, none of the alternatives cause unavoidable adverse impacts. Mechanisms are in place to monitor and use adaptive management principles in order to help alleviate any unanticipated impacts that need to be addressed singularly or cumulatively.

Irreversible and Irretrievable Commitment of Resources

The land management plan provides a programmatic framework that guides site-specific actions but does not authorize, fund, or conduct any project or activity. Before any ground-disturbing actions take place, they must be authorized in a site-specific environmental analysis. Therefore none of the alternatives cause unavoidable adverse impacts. Because the land management plan does not authorize or mandate any ground disturbing actions, none of the alternatives cause an irreversible or irretrievable commitment of resources.

Adaptive Management

All alternatives assume the use of adaptive management principles. Forest Service decisions are made as part of an on-going process. The land management plan identifies a monitoring program. Monitoring the results of actions will provide a flow of information that may indicate the needs to change a course of action or the land management plan. Scientific findings and the needs of society may also indicate the need to adapt resource management to new information.

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Appendix 1. Summary of Tribal Consultation on the Forest Plan

Date	Tribe(s)	Location	Comments
Aug. 25, 2006	Hopi, Hualapai, Yavapai-Prescott	Coconino National Forest Supervisor's Office	CNF Deputy Supervisor, Planners, Tribal Liaison, District Ranger, Archaeologist, FS Navajo Liaison. Meeting to discuss the Plan Revision process and how tribes would like to be consulted and involved. Tribes requested some training in the USFS planning process to better understand how to work with it.
Sept. 8, 2006	Acoma, BIA-Gallup and Phoenix, Ft. McDowell Yavapai, Havasupai, Hualapai, Hopi, Navajo, Dine' Medicine Men's Assoc., San Juan Southern Paiute, Tonto Apache, White Mt. Apache, Yavapai-Apache, Yavapai- Prescott, Zuni, and Cameron, Coalmine, Dilcon, Tolani Lake Gap-Bodaway, Leupp Tuba City Chapters	Letter	Introduces the start of the planning process, provide initial information. Has list of dates and places where public meetings will take place and offers to do more. Ask tribes to provide current contact information for CNF if they interested in working with CNF.
Nov. 1-2, 2006	Pueblo of Acoma, Hopi Tribe, Hualapai Tribe, Navajo Nation, Yavapai-Prescott Tribe	Coconino National Forest Supervisor's Office	Special training session for tribes on Forest Planning process, how to best communicate issues and concerns. Issues with FS credibility and Snowbowl were voiced.
Dec. 17, 2006	Cameron Chapter, Navajo Nation	Cameron Chapter house	Join meeting with Kaibab & Coconino Planners, Deputy Forest Supervisor, Forest Archaeologist
Jan. 19, 2007	Leupp Chapter	Leupp Chapter House	FS Navajo Tribal Liaison, Archaeologist, Planners, Landscape Architect
Jan. 31, 2007	Navajo Nation and Forestry Department	Window Rock	Joint meeting with Deputy Supervisor, FS Navajo Liaison, Public Service Staff, Forest Arch. & KNF Supervisor, Tribal Liaison, Planner
March 18, 2007	Cameron Chapter	Cameron Chapter House	CNF Planners, Tribal liaison, landscape Architect, FS Navajo liaison, Forest Archaeologist
July 12, 2007	Acoma, Ft. McDowell Yavapai, Havasupai, Hualapai, Hopi, Navajo, Dine' Medicine Men's Assoc., San Juan Southern Paiute, Tonto Apache, White Mt. Apache, Yavapai-Apache, Yavapai- Prescott, and Zuni,	Letter	Requesting comments on Wilderness recommendations

Appendix 1. Summary of Tribal Consultation on the Forest Plan

Date	Tribe(s)	Location	Comments
Aug. 8, 2007	Havasupai, Hopi, Hualapai, Kaibab Paiute, Navajo, Tonto Apache, Yavapai-Apache, Yavapai-Prescott	Kaibab NF Supervisor's Office, Williams	CNF Mormon Lake District Ranger, Forest Supervisor, Forest Arch, Planner, KNF Forest Supervisor, Tribal Relations, Planners, Rangers, archaeologists
Sept. 8, 2007	Acoma, Ft. McDowell Yavapai, Havasupai, Hualapai, Hopi, Navajo, Dine' Medicine Men's Assoc., San Juan Southern Paiute, Tonto Apache, White Mt. Apache, Yavapai-Apache, Yavapai- Prescott, and Zuni	Letter	Requesting comments on Draft Forest Plan Revision
Sept. 14-15, 2010	Hopi, Hualapai, Havasupai, Yavapai-Apache	Coconino NF Supervisor's Office. Flagstaff	CNF/KNF Intertribal Meeting. CNF/KNF Supervisor, Rangers, and staff present.
Nov. 5, 2010	Acoma, Ft. McDowell Yavapai, Havasupai, Hualapai, Hopi, Navajo, Dine' Medicine Men's Assoc., San Juan Southern Paiute, Tonto Apache, White Mt. Apache, Yavapai-Apache, Yavapai- Prescott, and Zuni	Letter	Invitation to attend Forest Plan Revision public meetings to provide comments or offer to come to a place of their choice to have a special meeting with their individual tribe
Nov. 19, 2010	Ft. McDowell Yavapai, Havasupai, Hualapai, Hopi, Navajo, White Mountain Apache, Yavapai-Apache, Yavapai-Prescott,	E-mail	Offered to visit their individual tribe to discuss the Forest Plan Revision and notifying them of the Forest Plan Revision website where they can find information about it
Dec. 7, 2010	Hopi	Coconino NF Supervisor's Office. Flagstaff	Discussed Forest Plan Revision for Hopi input
Jan. 11, 2011	Hopi	Hopi Cultural Preservation Office, Kykotsmobi	Discussed Forest Plan Revision, Four Forest Restoration Initiative, and Schedule of Planned Activities for Hopi comment and input
Jan. 24, 2011	Havasupai	Letter from Chairwoman	Provides comments on Snowbowl and water issues.
Feb., 23, 2011	Havasupai, Yavapai-Apache	Coconino NF Supervisor's Office. Flagstaff	Discussed Forest Plan Revision

Appendix 2. Desired Conditions for Heritage and Tribal Resources

Historic and prehistoric sites, including known American Indian sacred places and traditional cultural properties, are preserved and protected for their cultural importance and are generally free from adverse impacts or effects minimized through consultation with the tribes that occupied the area in historic times. Site integrity and stability is protected and maintained on sites that are susceptible to imminent risks or threats, or where the values are rare or unique. All priority heritage assets are stable and their significant values are protected. Vandalism, looting, theft and human caused damage to heritage resources are rare. Site significance and integrity are maintained through conservation and preservation efforts and receive minimal impact from visitors. Cultural and scientific values are continually enhanced through research and partnerships with tribes, universities, and museums. Through interpretation and public involvement in archaeological activities, appreciation and respect of cultural values and a sense of stewardship for our common heritage is increased.

Objectives for Heritage Site Conservation, Evaluation, and Interpretation

Divide the Forest into archaeological study units (geographic areas that are meaningful units of analysis with which to examine and interpret the prehistory of that area and identify heritage resource property classes (types of sites such as field houses, flaked stone scatters, small pueblos, large pueblos, pit house clusters, and rock art that have cohesiveness and can be studied as individual classes and can be compared between archaeological study units). In property class surveys, give priority for identification and documentation to certain site types, such as wooden structures and rock art that may be more sensitive to impacts due to fire activities and wildland fire.

Complete analysis of at least 3 heritage property classes (site types or combinations of site types) within 10 years of plan approval to determine their rarity or ubiquity, significance, and information gaps about them that will lead to better understanding of those site classes and more cost-effective project clearances.

Forest GS Professional Series archaeologists provide at least 20 interpretive presentations and activities to the public each year.

Each Forest GS Professional Series archaeologist provides, produces, or assists in at least one scientific presentation, publication, or research project each year.

Non-project related archaeological surveys are conducted in areas of moderate to very high archaeological site density on at least 100 acres each year.

Management Approaches for Heritage Site Conservation

Develop a prioritized list of sites that need stabilization or documentation in order to preserve their information potential and significant values. Focus on sites at risk from threats from vandals, natural conditions, and structural stability. Monitoring of sites is prioritized in high visitation areas such as near roads, campgrounds, and trails. Also prioritize sites for their ability to contribute to significant research issues at local, national, and international levels.

Work with partners such as the Arizona Site Stewards program, the Arizona Archaeological Society, National Park Service, and the Museum of Northern Arizona to study, protect and monitor sites.

Cultural and biological resources in the vicinity of Hartwell Canyon are protected through partnerships and collaboration with organizations, such as The Nature Conservancy and The Archaeological Conservancy.

Achieve a balance between National Historic Preservation Act (NHPA) Section 106 activities (ensuring projects are in compliance with legal requirements to evaluate and protect archaeological sites) and NHPA Section 110 activities (actions focused on the cultural resources themselves). Studying, documenting, and preserving sites as well as conducting a program of “public archaeology” to educate people about heritage through site interpretation and hands-on involvement in the archaeological process.)

Heritage Collections

Desired Conditions for Heritage Collections

Archaeological site and survey records are maintained and updated on the Forest. Associated records (36 CFR 79.4) may be shared and maintained at institutions that meet professional standards (e.g. 36 CFR 79, American Museums Association accreditation) and have research interests on the Coconino NF. Archaeological collections and associated records are curated at museums, organizations, and other institutions that meet professional standards for the purpose of scientific research, public education, and interpretation. Collection of additional items occurs when necessary to mitigate project impacts and for scientific or educational value.

Management Approaches for Heritage Collections

Develop agreements with Forest Service approved repositories to curate records and artifacts. Periodically inspect collections and repository facilities to ensure they continue to meet professional standards. Projects resulting in the collection of artifacts should address funding for analysis and curation of those artifacts.

Records will be retained at Forest Services offices when they need to be accessed regularly for management and evaluation purposes. Maintain electronic records, including an index of primary documents of historic research value.

Heritage Enhancement and Interpretation

Desired Conditions for Heritage Enhancement and Interpretation

Heritage resources provide educational opportunities that connect people, past and present, to the land and its history. Through positive heritage experiences provided by interpretive sites, historic standing structures, and other materials, the public develops an appreciation for the region’s history and develops an awareness of preservation efforts. In some cases, historic routes (e.g., railroad grades, General Crook Road, Beale Road) are used for recreation trails with proper interpretation. Heritage-based recreation opportunities are connected, where practical with other recreation opportunities, such as trails.

Public enjoyment is enhanced by opportunities to visit interpreted heritage sites. Archaeological site etiquette information is readily available to national forest visitors. Interpretation of the human history of the Coconino NF promotes greater public understanding of the communities

that have depended on this landscape for their livelihood, recreation, and spiritual well-being and provides connections between prehistoric, historic, and modern people.

Opportunities exist for volunteers to participate in heritage resource conservation activities such as research, site stabilization, conservation, artifact analysis and cataloging, and interpretation. Cooperation with private industry, museums, secondary schools, universities, organizations, and other federal, state, and local governmental agencies provide for heritage tourism that enhances the overall experience of visitors to the Forest, results in preservation and protection of those resources, and is consistent with tribal interests and desires.

Heritage programs, interpretive presentations, or publications are available to provide the public with opportunities to learn about, understand and experience the Coconino NF's prehistory and history.

Cultural resource findings will be synthesized and shared with the scientific community and public through formal presentations, publications, and educational venues.

The Forest's historic documents, such as photographs, maps, and records, are available to the public for research and interpretation.

Guidelines for Enhancement and Interpretation

To retain heritage site integrity and value, commercial use of sites should be limited to activities that enhance the public's understanding of the resource, protect and preserve the resource, and are consistent with tribal interests.

Management Approaches for Enhancement and Interpretation

Partnerships are encouraged with American Indians, commercial ventures, volunteers, museums, and universities for documenting, preserving, interpreting, and managing sites, and to evaluate and develop creative management opportunities.

Update the Cultural Resources Overview as archaeological study units are defined and property classes are analyzed.

Tribal Relations and Uses

General Description and Background for Tribal Relations and Uses

American Indian tribes have lived for centuries on the land that is now the Coconino NF and the Forest recognizes and respects those relationships to the land. Some tribes consider the prehistoric sites to be the homes of their ancestors or recognize particular sites and places to be of historical, cultural, and religious significance. The Forest Service and federally-recognized American Indian tribes have a special and unique government-to-government relationship (one sovereign nation to another) based on the U.S. Constitution, treaties, statutes, and court decisions. The Coconino NF is adjacent to the Yavapai-Apache Nation near Camp Verde and is about six miles from the Navajo Reservation boundary. The Forest regularly consults with 13 American Indian tribes: Fort McDowell Yavapai Nation, Hopi Tribe, Hualapai Tribe, Havasupai Tribe, Navajo Nation, Pueblo of Acoma, Pueblo of Zuni, San Carlos Apache Tribe, San Juan Southern Paiute Tribe, Tonto Apache Tribe, Yavapai-Apache Nation, Yavapai-Prescott Tribe, and the White Mountain Apache Tribe.

Desired Conditions for Tribal Relations and Uses

The Coconino National Forest recognizes American Indian needs and viewpoints and fosters a robust relationship with its consulting Indian tribes and related groups. The Coconino NF tribal consultation process notifies Indian tribes about proposed activities on the Forest that may be of interest, encourages face-to-face dialogue about proposed activities that are of interest, and provides information about how tribal input received during consultations is used in decision-making processes. The Coconino NF consultation processes and tribal interactions are compatible and consistent with its neighboring National Forests.

Tribes are working with the Forest to identify TCP's so they can be protected from impacts by Forest activities and public visitors, preserved, or restored for their cultural importance.

Tribal practitioners have access to areas that provide them an opportunity to practice traditional activities, such as plant gathering, and ceremonial activities that are essential in maintaining their cultural identity and the continuity of their culture with reasonable limitations, consistent with public safety and multiple uses by other Forest users. Forest products used by American Indians, organizations such as the Native American Church, and communities with ancestral or historic ties to the Coconino NF continue to be available for traditional practices. Collection of culturally important plants by Indians does not negatively affect the presence and distribution of those species on the Forest.

The Forest provides a setting for the education of tribal youth in culture, history, and land stewardship and for the exchange of information between tribal elders and youth.

Management Approaches for Tribal Relations and Uses

Designate a Coconino NF employee to cultivate and maintain a relationship with American Indian tribes and groups, facilitate the tribal consultation process, and maintain a record of tribal consultations.

Memoranda of Agreement are developed between the Forest and consulting tribes to guide consultation processes and reflect the tribes' particular perspectives and interests in a government-to-government relationship.

Meet regularly with consulting tribes to better understand their needs and viewpoints.

Partner with consulting tribes in the management of cultural sites so that cultural resources are preserved and interpreted for the enjoyment of all visitors.

Work with the Kaibab National Forest and local tribes to develop a consistent forest products collection policy and tribal fuelwood program for use on both Forests.

The Forest will continue to use a shared stewardship approach to land management based on meaningful consultation with local tribes.

Tribal relationships and communications can be enhanced through volunteer opportunities and employment of tribal members.