Travel Management Rule Implementation, FEIS for Gila National Forest

Cultural Resources Specialist Report

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for:

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I. Cultural History and Affected Environment/Existing Condition

Gila National Forest History

The Gila National Forest (Gila NF) has a rich archaeological and cultural history. The Gila NF includes lands that have been used and occupied by humans throughout the prehistoric era, beginning with the Paleoindian Period (<9,500 B.C. -5,500 B.C) (ARMS 1993). Paleoindian peoples were highly mobile hunters and gatherers who hunted megafauna (now-extinct large mammals such as mammoths) (Cordell 1997). The Archaic Period (5,500 B.C. -A.D. 200) follows the Paleoindian Period (ARMS 1993). Archaic peoples were also mobile and relied on hunting and gathering. However, this is the period in which people began to rely more on plants, and horticulture began (Cordell 1997). The Mogollon Culture (A.D. 200-A.D. 1400) spanned about 1,200 years during which people relied more on horticulture, followed by predominance of agriculture. Pottery and more permanent dwellings (pithouses, A.D. 200-A.D. 1000, and then pueblos, A.D 1000-A.D.1400) were hallmarks of the period (ARMS 1993; Cordell 1997; Diehl and LeBlanc 2001; Martin 1979). Phases of the Mogollon Culture are primarily defined by pottery and dwelling types (see Anyon and LeBlanc 1984; LeBlanc 1980a; LeBlanc 1980b; Lekson 1992; Berman 1989; Martin and Rinaldo 1950). The Mogollon people are the most widely studied on the Gila NF. Most prehistoric sites found on the Gila NF are Mogollon, including habitation remains in the form of pithouses or masonry dwellings; roasting pits; lithic (stone) and pottery artifact scatters; some agricultural features like check dams; cultural landscapes; etc.

The historic period began in New Mexico with Spanish contact in 1539. On the Gila NF and elsewhere in New Mexico, the historic period is divided by the rise and fall of political control by the Spanish (A.D. 1539-1821), Mexican (A.D. 1821-1848), and American (A.D. 1848-present) periods (Opler 1983). From the Spanish Period through the first several decades of the American Period, the goal of each political entity was to secure safe passage through this area and/or provide access to its resources for mining, ranching and grazing. During the American Period, overlapping interests of Apache peoples and settlers of the area led to conflict between the two groups. Eventually, the U.S. Government turned to the removal of Apache peoples to reservations. Most resisted as long as possible, but eventually most Apache Tribal people were removed to several reservations within and outside New Mexico (Opler 1983).

Contemporary and historic land uses include mining, ranching, grazing, logging, frontier settlement, frontier military activities, and government land management. Evidence of these activities persists in the archaeological record today in the form of the remains of forts, cabins, corrals, windmills, abandoned mines, military reservations, water wells, irrigation ditches, check dams, bridges, sawmills, homesteads, historic roads and trails, and Forest Service administrative sites. Other site types include rancherias, camps, battle sites (Indian Wars in particular), and trash dumps. Since the establishment of the Gila NF in 1905, ranger stations, administrative sites, lookouts, and recreational areas have been built as well. Finally, Civilian Conservation Corps (CCC) associated camps and infrastructure like roads, bridges and campgrounds are found on the Gila NF.

Today, land use in the Gila NF continues to follow the multiple use mission of the Forest Service (FS), including grazing, mining, ranching, and vegetation and fuels management. Native American tribes also continue to intermittently use the Gila NF for traditional activities including plant gathering and visits to special places. Tribes have not identified any Traditional Cultural Properties (TCPs) or sacred sites within the Travel Management project area through Travel Management consultation, nor have any been identified as being affected by the project.

Affected Environment

For the past 35 years or more, Forest Cultural Resource Specialists (Archeologists), in compliance with Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended, have inventoried about 421,709 acres (12%) of the Gila NF's 3.3 million acres to professional standards. A total of approximately 6,656 cultural sites are in Gila NF electronic databases, which contain the best available baseline information for known cultural resources and archeological surveys on Forest.

For the Gila NF and Region 3 of the Forest Service, a cultural resource site is defined as "a locus (location) of purposeful human activity which has resulted in a deposit of cultural material beyond one or a few accidentally lost artifacts." (USDA-Forest Service Southwestern Region 1987: 3). Please see page 7 of this document for an expanded definition. In practical terms, cultural resource sites include things like ancient pueblo structures, broken pottery sherds, grinding stones, arrowheads or other stone tools scattered on the ground, rock walls, or the remains of historic homesteads or mines.

Within the boundaries of the Gila NF, 47 sites or groups of sites known as Districts are listed on the National Register of Historic Places (NRHP). About 1,840 sites have been determined eligible for the NRHP, and about 424 have been determined ineligible. About 4,345 sites remain unevaluated for NRHP eligibility, and must be treated as if they are eligible until an official determination is made in consultation with the New Mexico State Historic Preservation Officer (SHPO). Unevaluated sites require further study before it can be determined whether or not they are eligible to the NRHP.

Table 1. Number of known sites and National Register status within the boundaries of the Gila National Forest

National Register Status	Number of Sites
Listed	47
Eligible	1,840
Unevaluated	4,345
Not Eligible	424
Total Number of Known Sites	6,656

II. Methods

Cultural Resource Compliance with National Historic Preservation Act (NHPA)

In lieu of using the 36 CFR 800 regulations of the National Historic Preservation Act, the Forest is complying with this law by following the USDA-Forest Service Region 3 Protocol regarding Section 106 consultation for Travel Management Route Designation (TM Protocol) (USDA-Forest Service Southwestern Region; New Mexico SHPO 2007). The TM Protocol is Appendix I of the Southwestern Region Programmatic Agreement (PA) between SHPO, Advisory Council on Historic Preservation, and USDA-Forest Service. Both the PA (USDA-Forest Service Southwestern Region; New Mexico SHPO; Advisory Council on Historic Preservation; et al 2003) and TM Protocol streamline and standardize the Section 106 consultation process for Forests in Region 3, including the Gila NF. For example, the Protocol stipulates that in some cases archaeological surveys will not be required or can be conducted at less than 100% coverage. In many instances, the Protocol also eliminates the need for prior consultation with SHPO for sample surveys. Through the development of the TM Protocol, the direct, indirect, and cumulative effects of Travel Management have been considered.

The TM Protocol exempts existing road prisms and associated constructed features (culverts, ditches, etc.) from Section 106 compliance and consultation. In the protocol, it is agreed that impacts to cultural resource sites may have occurred when these roads were created, and that disturbance from continued use of these roads is acceptable if the portion of the site within the road has already been disturbed to a substantial degree. This does not prohibit implementing protection measures for known sites where use is known to be causing unacceptable impacts.

TM designations that are considered new undertakings under NHPA will go through Section 106 consultation and compliance per R3 PA and the TM Protocol before they appear on the Motorized Visitor Use Map (MVUM). The protocol defines the following designations as new undertakings:

- previously closed roads and trails not open to motor vehicle use
- non-system roads and trails, such as unauthorized user-created roads, old temporary roads, and other unclassified roads and trails
- non-system fixed routes or spurs and their associated features to access dispersed camp sites or areas, including the dispersed camp sites and areas themselves
- fixed-distance corridors along certain roads, including exempt roads, that will be designated for dispersed camping
- areas open to cross-country motorized travel
- roads or trails that are considered to be historic properties
- proposed new construction, reroutes, and realignments

If effects to cultural resources are identified, they will be addressed by the Forest in consultation with SHPO and other consulting parties. Adverse effects will be minimized or avoided through mitigation. Under the TM Protocol, the TMR NEPA decision can be signed based on existing cultural resource data. Additional cultural surveys and compliance may be phased up to three years after the decision has been signed.

The Gila NF has consulted with the New Mexico State Historic Preservation Officer (SHPO) on TM in the Consolidated Cultural Resource Compliance Report for the Travel Management Rule (Firebaugh-Smith and Knolles 2012 and 2012a). This report not only outlined the Gila NF TM survey strategy, survey methods, and protection measures for sites, but also asked for concurrence on Travel Management effects to cultural resource sites provided in the report. This consolidated report was submitted and concurred upon by SHPO in September 2012.

Several reports are currently being written for TM survey. These should be submitted to SHPO by early 2014. After these reports are completed, only a few hundred acres of motorized dispersed camping corridors, newly proposed routes, and areas remain to be surveyed. It is anticipated that phasing will consist only of some loose ends in survey, site visits, and report writing. It is also anticipated that most of this work will be completed by the development of the first MVUM.

Protection Measures for TM Effects

Sites located within the Section 106 Area of Potential Effect (APE) for new undertakings will be assessed for TM effects and potential adverse effects will be mitigated or avoided, as appropriate. To aid in determining which sites need protection measures or where potential effects need to be avoided or mitigated, the Gila NF developed a Risk Analysis tool to accurately describe the current site condition (Appendix E). A list of protection measures is provided through the TM Protocol:

- dropping proposed motorized roads, trails, corridors, or area designations to avoid or reduce direct or indirect effects on historic properties
- re-routing or modifying designated roads or trails to protect historic properties. Rerouting or modifying roads will be subject to Section 106 compliance prior to ground disturbance, as provided for in the Programmatic Agreement
- use of temporary emergency closures, if needed, while unacceptable effects on historic properties are addressed
- revision of designations, if determined necessary to protect historic properties from adverse effects
- monitoring to ensure that impacts to historic properties are not occurring or that protection measures are working
- leaving roads, trails, areas off the MVUM distributed to the public until after all Section 106 compliance needs are met.

In addition to these protection measures, the Gila NF has also chosen to include additional measures to help prevent or reduce the effects of TM activities on cultural resources:

- removing fire rings and trash
- use of fencing or other barriers
- posting signs

NEPA Analysis

The NEPA analysis considers only the ‘change’ to the existing condition. Changes include proposals of motorized big game retrieval (MGBR), motorized dispersed camping (MDC) corridors, motorized areas, and newly proposed routes. Existing routes (roads and trails) that are part of the existing Forest System are not being analyzed. Only those routes that are being newly added to the system will be analyzed.

These routes include unauthorized routes, routes being re-opened, and routes changing status from non-motorized to motorized. (These routes will be referred to as new routes or newly proposed routes throughout this analysis).

The APE for Travel Management FEIS NEPA analysis is based on the current condition:

- Miles of proposed motorized roads and trails are analyzed at 15 meters (49ft) either side of the centerline.
- Miles of fixed width corridors for motorized access to dispersed camping at 300ft either side of the centerline (600-foot total width)
- Number of acres for MBGR proposed per alternative (300ft from open roads or on roads where Motorized Dispersed Camping is allowed, 1/2 mile, 1 mile, or no distance restriction from roads)
- Acreage of motorized areas proposed per alternative for motorized cross-country use

The Gila NF believes that this APE adequately measures and addresses direct and indirect effects, given the recommended minimum distances identified in the TM Protocol and the results of a recent looting and vandalism analysis.

Cultural Resources

Definition of Cultural Resource Sites

For the Gila NF and Region 3 of the Forest Service, a cultural resource site is defined in Forest Service Handbook (FSH) 2309.24 as "a locus of purposeful human activity which has resulted in a deposit of cultural material beyond one or a few accidentally lost artifacts" (USDA-Forest Service Southwestern Region 1987: 3-4). Under this Forest Service handbook definition, cultural resources that qualify as sites should exhibit at least one of the following:

a. One or more features (defined as non-portable items made, modified, or manipulated by humans, including hearths, prehistoric and historic architecture, trash middens, walls, bedrock mortars, agricultural check dams, fences, corrals, “rock art,” etc.)
b. One formal tool if associated with other cultural materials, or more than one formal tool; OR
c. An occurrence of cultural material that contains one of the following:
    - Three or more types of artifacts;
    - Two types of artifacts or materials in a density of at least 10 items per 100 m2
    - A single type of artifact or material in a density of at least 25 items per 100 m2

Boundaries of cultural resource sites include all features, tools, identifiable activity areas and all areas of cultural material exhibiting a density of ten or more cultural items per 100 square meters. These criteria may be modified, where appropriate, based on a professional archaeologist's judgment. Isolated occurrences (IOs) are loci of human activity that do not meet site criteria and are considered not eligible to the National Register of Historic Places.

National Register of Historic Places (NRHP) Eligibility

A cultural resource site is included in or considered eligible for the NRHP if it meets the National Register Criteria for Evaluation. Evaluation of a site’s eligibility involves considering the property’s age and significance in the context of its integrity. To be considered historic, a property must generally be at

least 50 years old. A property's significance relates to its association with events, patterns, persons or characteristics that were important in the past, including the lives of important individuals, significant history, historic or prehistoric landscapes, and engineering/architectural achievements. A site may also be considered significant if it has the potential to yield scientific information through archaeological investigation. A significant cultural resource site that is eligible to, or listed on the NRHP, is termed an "historic property." Integrity is defined as the degree to which a site retains its location, design, setting, materials, workmanship, feeling, and association (USDI-National Park Service; Cultural Resources; Interagency Resources Division 1990).

NRHP eligibility recommendations for the purpose of Section 106 are made for every cultural site found or visited during recent Travel Management inventories, and must be concurred with by New Mexico SHPO to be official. Cultural sites located in past cultural resource survey areas may or may not have been evaluated for NRHP eligibility, and the majority of sites on the Gila NF are currently unevaluated. For the purposes of Section 106 and this analysis, all unevaluated cultural resources will be treated as if eligible.

Definition of Adverse Effect for Cultural Resources

As defined in 36 CFR 800.5.a.1,

> "…an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may also include reasonably foreseeable effects that may occur later in time, be farther removed in distance or cumulative."

Examples of such adverse effects include but are not limited to:

- Physical destruction of or damage to all or part of the property
- Alternation of a property, including restoration, rehabilitation, repair, etc.
- Removal of the property from its historic location
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features.

Data

Information for this analysis was gathered using the most current data available from the Gila National Forest electronic Geographic Information Systems (GIS) database, FS Heritage INFRA, as well as hard copies of Gila NF site records.

Cultural Resource Sites

The Gila NF cultural resources data set includes 6,653 sites in the corporate GIS layers. This database was built using a variety of data entry methods, including migrating site data from the New Mexico Archaeological Records Management Section (ARMS) database for all sites within the Gila NF's administrative boundaries.

There are certain discrepancies in the data set. For example, a number of cultural sites included in the database are not located on Forest Service lands, but are located on other federal, state or private land inholdings within the Forest's administrative boundaries. Other discrepancies include duplications or errors for known sites, site numbers, site locations, and incorrect information in fields such as NRHP site eligibility. These types of discrepancies are corrected as they are found and/or as sites are visited through forest projects.

Sites that have been determined to be ineligible to the NRHP are not included in this analysis because the Forest Service and all Federal agencies are not required to consider the effects of their projects on ineligible sites. There are 424 ineligible sites in the Gila NF GIS database. All sites that are listed, eligible, or unevaluated/ undetermined for the NRHP are included in this analysis regardless of whether they were identified through cultural resource survey or other means. In evaluating effects of Alternative B (No Action), cultural sites located in existing non-motorized areas on the Gila NF (wilderness and other special areas) were removed from consideration because TM designations and effects will not occur in those areas.

Surveys

The Gila NF cultural resources survey data set was built from digitized survey maps in hard copy survey reports. Although comprehensive cultural resources surveys started in 1974 on the Gila NF, professional standards have changed for cultural surveys over time within New Mexico and Region 3 of the Forest Service. Cultural resource surveys dating from 1980 and later and those where survey methods were intensive and complete, are considered to meet current professional standards, and were used for this analysis (USDA-Forest Service Southwestern Region 1987: 5). This date range encompasses the largest number of surveys and data likely to be adequate by current standards. Overall, there are approximately 421,708 acres of previous heritage survey meeting these criteria, or approximately 12% of the Gila NF land base.

Determination of Cultural Survey Needs

The TM Protocol allows for sample survey in areas of National Forests where known site density is low. High site density areas will require intensive 100% cultural resource survey.

Gila NF heritage specialists developed criteria for high and low site density based on empirical analyses of data from previously surveyed areas of the Forest, and the frequency of known sites by elevation and slope. Once site frequency was determined, site density was calculated according to acres in elevation and slope categories across the Gila NF. These densities were then used to determine which locations would require intensive cultural survey or sample survey for the Travel Management project. (Firebaugh-Smith and Knolles 2012).

Analysis

The purpose of the analysis is to analyze the potential effects of Travel Management on cultural resources on the Gila NF. Analysis took place in March 2013.

Relative Risk Analysis

This report uses a relative risk analysis to compare alternatives. Relative risk is considered the potential impact that can result from one action (alternative) measured against the potential impact that might result from a different action (alternative).

For cultural resources, the measure for direct and indirect effects for all actions will be the number of sites within the APE for the action. The number of known sites is directly related to how many miles or acres are proposed for each action per Alternative. The Alternatives with higher numbers of miles and acres show higher numbers of known sites, and vice versa. Therefore, the alternatives proposing more miles or acres per action will pose a higher risk of direct and indirect effects to cultural resources conversely those proposing fewer miles will pose a lower risk of these effects.

Background Assumptions

- Motorized access, including newly proposed routes, motorized areas, motorized big game retrieval, and motorized dispersed camping corridors, may provide easier access and a potential risk to cultural resources from existing, ongoing, or new direct, indirect, or cumulative effects related to these activities.
- Some data suggests that cultural sites located near routes may be more susceptible to looting (Spangler et al. 2006 and Hedquist and Ellison 2010).
- On the Gila National Forest, new analysis on looting and vandalism does not show a strong relationship between the distance a site is located from a route and the presence/absence of looting and vandalism. On the Gila NF, looting and vandalism occur forest wide, and the presence of routes may not be a precursor for these disturbances (Appendix F).
- Cultural Resources are analyzed under the assumptions that the public will comply with the regulations set forth by the Travel Management Rule.

Measures

Motorized Routes

The measure for determining the relative risk of designating newly proposed motorized routes is the number of known sites per alternative for this action. GIS was utilized to determine how many known sites are located within the analysis area for each alternative. GIS also provided information like the total number of miles for newly proposed routes, the existing route system, and the entire route system for each alternative.

The number of acres surveyed to standard is displayed for each action. This gives some information on the number of acres surveyed per alternative and demonstrates how accurate the number of known sites may be for each alternative. The greater percentage of acreage surveyed to standard, the more accurate the number of known sites.

For this analysis, all routes were analyzed at 15 meters either side of centerline. This distance is great enough to include adjacent roadside parking.

Assumptions

- While existing routes are not considered part of the ‘change’ that requires analysis for cultural resource, the Gila NF does include an existing route system for each Alternative for comparison to Alternative B, the No Action Alternative. Existing routes included for this comparison are those within the Forest boundaries under Forest Service jurisdiction, excluding closed and decommissioned routes. In addition to these routes, US highways, State highways, and County roads are also included, because they may allow access to forest lands.

- Analysis of motorized routes combined roads and trails, because direct and indirect effects from these routes are similar in nature.

Note: In the DEIS, route analysis included existing routes with proposed changes in designations. These routes were inadvertently added to the newly proposed route miles. NEPA requires only that the 'change' to the current condition be analyzed. For routes, only newly proposed routes, which include adding unauthorized routes, routes being re-opened, and routes changing status from non-motorized to motorized, are considered the change to the system. Therefore, existing routes changing designations should not have been included in the DEIS analysis. This is corrected in this analysis.

Also, the numbers of miles in this analysis will not match those found in DEIS. This is because of several miles of newly proposed routes have been added to the FEIS and miles being inadvertently left out of the DEIS analysis.

Motorized Dispersed Camping (MDC) Corridors

The measure for determining the relative risk of designating Motorized Dispersed Camping (MDC) corridors to cultural resources is the number of known sites within each alternative for this action. GIS was utilized to determine the number of sites within MDC corridor for each alternative. GIS also provided data on the number of acres of MDC corridors, and the number of acres surveyed to standard per Alternative for comparison.

Analysis of MDC corridors covers 300ft either side of road centerlines per Alternative.

Motorized Areas

The measure for determining the relative risk of designating motorized areas to cultural resources is the number of known sites within each alternative for this action. GIS was utilized to determine the number of known sites within motorized areas. GIS also provided information on the number of total acres in motorized areas for each Alternative and how many of these acres are surveyed to standard.

Analysis for motorized areas covers the exact proposed acreage for each motorized area.

Assumptions:

- Thirty-seven motorized areas have been proposed in Alternatives C, F, and G. These motorized areas allow any type of motorized vehicle activity within them, but 36 of the 37 have traditionally been used as camping areas and this is the expected ongoing use. The remaining motorized area is located on the Reserve Ranger District, and open to unrestricted OHV and motorcycle use. This 3.31 acre motorized area is located within a borrow pit near an old landfill.
- Motorized areas will be analyzed separately, the 36 that have traditionally used as camping areas will be analyzed together and the 1 open to unrestricted OHV and motorcycle use will be analyzed separately.
- The direct and indirect effects of the 36 motorized areas traditional used as camping areas are very similar to MDC corridors. However, these actions are analyzed separately. The results of the motorized area analysis do not take into account the number of known sites analyzed for MDC camping and vice-versa. For Areas, the potential risk of direct and indirect effects to known cultural resources from motorized areas is very low in Alternatives C, F, and G, and non-existent in Alternatives D and E. However, MDC corridors are proposed for Alternatives C, D, F, and G. Therefore, a potential risk of similar effects from MDC corridors to known sites is still present and varies dependent upon the alternative.

Motorized Big Game Retrieval (MBGR)

The measure for determining the relative risk of designating Motorized Big Game Retrieval (MBGR) to cultural resources is the number of known sites within each alternative for this action. GIS was utilized to determine number of known sites that are within MBGR designations for each alternative. GIS also provided the total number of acres and the number of acres surveyed to standard for comparison. This information was evaluated in the context of potential MBGR disturbance, calculated from New Mexico Game and Fish harvest records for 2006 through 2009, the number of vehicle trips used to retrieve game, vehicle size, type of animal being harvested and number of days in the hunt season (USDA-Forest Service 2010a: 44-45 and Gila Travel Management FEIS Project Record 2013).

Analysis for MBGR covers the exact proposed acreage for MBGR per Alternative.

Assumptions

Information on the number of hunters that use motor vehicles to retrieve downed game was lacking. The forest calculated potential acres of disturbance by motor vehicles for each big game species by alternative using harvest information, season of hunt, license sales from the Department of Game and Fish, and the following assumptions:

- Every hunter harvests their game on the Gila National Forest, even when the game management unit (GMU) does not lie entirely within the forest.
- Every hunter uses a vehicle to retrieve their game.
- Every hunter makes one trip in and one trip out, using the full distance allowable.
- Every hunter uses a full-size vehicle (6-foot width).
- Harvest numbers are averaged from 2006–2009 New Mexico Department of Game and Fish harvest records and surveys, with the exception of javelina.
- No harvest records are available for javelina, so an average harvest rate for other species (30 percent) was used to calculate the number of javelina harvested based on 30 percent of 2,700 licenses issued throughout the state. Assuming that the vast majority of javelina are harvested in the southern half of the state, we used half of the potential harvest or 450 harvested.
- Vehicle use is allowed on approximately 2.2 million acres outside of wilderness and other areas.

Many hunters do not use a vehicle to retrieve their game, and it is unlikely that all will use the full distance allowed. Some may also need more than one trip in and out, and many will not use full-size vehicles. Data are not available to calculate the potential area of disturbance to a more precise estimate. It is likely that these estimates are overestimated. The potential disturbance acres by alternative for motorized big game retrieval were calculated for action alternatives with motorized big game retrieval (Table 2).

Table 2. Acres of potential disturbance to wildlife from motorized big game retrieval

Species	Number of Days Open for Hunt	Average Harvest per Year	Potential Acres of Disturbance	Percent Acres Potentially Disturbed within the Motorized Big Game Retrieval Corridor Allowed
Alternative C corridor – 1 mile from each side of road (2.08 acres)				
Deer and elk	108	2,633	3,995	
Javelina	90	450	675	
Bear	91	71	107	
Mountain lion	212	33	50	
Antelope	18	18	27	
Total			4,854	0.2%
Alternative D corridor – 300 feet same as motorized dispersed camping corridors (84,388 acres)				
Deer and elk	108	2,633	220	0.3%
Alternative F corridor – one-half mile from each side of road (1.51 acres)				
Elk	89	1,311	954	0.06%
Alternative G corridor – 300 feet – same as motorized dispersed camping corridors (94,008 acres)				
Deer and elk	108	2,633	220	0.2%

New Mexico Department of Game and Fish rules and regulations concerning hunting may vary slightly year to year. Specifically, the season or number of days allowed for hunting and the available number of tags per species may vary. Harvest data may also vary slightly. As a result, the number of acres of potential disturbance from MBGR may also vary slightly year to year.

Risk Analysis:

A process was developed to assess the existing condition of cultural resource sites located within TM project areas (see Revised Effects to Cultural Resources and Risk Analysis Form in Appendix E). The objective of this process is to identify direct, indirect, and potential cumulative effects to cultural resources related to several categories of disturbance.

This analysis has been used in several ways:

1) First and foremost the Risk Analysis is a tool that the Gila NF utilized to accurately record site condition for sites that have been or will be revisited or discovered through TM surveys. This tool has helped and continues to help identify cultural resources at risk for potential effects from each TM designation requiring Section 106 consultation and compliance. The presence absence and degree of each risk factor disturbance helps to determine site recommendations and proposed mitigations for potential TM effects. For this use, the Risk Analysis evolved to focus on motorized camping and motorized disturbances for Section 106 consultation and compliance (Appendix E) (Firebaugh-Smith and Knolles 2012).
2) The Risk Analysis was used in the DEIS to identify general trends in impacts from MDC corridors and motorized areas to known sites within each Alternative and to support the idea that as MDC corridor miles/acres and motorized areas acres are reduced so do the number of sites with motorized dispersed camping impacts (USDA-Forest Service 2010a: 236). However, the FEIS does not use this tool for MDC corridor or motorized area analysis. The Risk Analysis was not intended to be used as a measure or decision making tool for NEPA analysis. In retrospect, it

did not add a great deal of new information to either the MDC corridor or motorized area analysis. Therefore, it has been removed from the FEIS MDC corridor and motorized area analysis. However, the results from the Risk Analysis are in Appendix D for reference.

3) The Risk Analysis was also used in the DEIS and is used in the FEIS in the cumulative effects discussion. The analysis tracked different kinds of disturbances to sites. While the Risk Analysis has not been updated, it still contains pertinent information that is beneficial in that discussion.

Looting and Vandalism Analysis:

The Gila National Forest's NEPA analysis for motorized routes in the Travel Management Rule DEIS encompassed an Area of Potential Effect (APE) of 10 feet either side of the centerline for trails and 50 feet either side of the center line for roads. These distances are based from the average width of trails and roads, including road side parking. Motorized dispersed camping corridors were analyzed at 300 feet either side of the road centerline.

Commenters were concerned that the Gila NF did not fully analyze indirect effects to sites from motorized access. They voiced concern that the analysis areas for routes and camping corridors were too small to capture the full potential of indirect effects, specifically looting and vandalism, associated with motorized route designation and access.

In response to comments to the DEIS, the Gila NF conducted a Looting and Vandalism Analysis on 286 prehistoric and historic structural sites, including petroglyphs and pictographs, within 100 meter interval distance bands (0-100, 101-200m, etc.) from all routes used to create the Travel Management Action Alternatives. The main objective of the study was to determine if there was a relationship between the distance a site is located from a route and the presence/absence of looting or vandalism. (Please, refer to Appendix F for more information on analyses conducted by the Gila NF).

The analysis results show there are a higher percentage of sites with disturbances like looting or vandalism near routes, however, sites at farther distances are experiencing these types of disturbances as well. To better understand and compare these results, the Gila NF ran statistical analyses using Chi-square calculations with Monte Carlo Simulations. The Gila NF considered a statistically significant relationship to be one that falls below or equal to the 95% confidence interval ($p<=0.05$). These analyses show no statistical difference between distance bands and the number of sites that have these disturbances (where "$p\ \chi^2 \geq$ obs." represents the results of the Monet Carlo simulations: $p\ \chi^2 \geq$ obs. = 0.488; $p\ \chi^2 \geq$ obs. = 0.193; $p\ \chi^2 \geq$ obs. = 0.177).

The results do not show a strong relationship between the distance a site is from a route and the presence/absence of looting and vandalism. Therefore, the presence of routes may not be a precursor for these disturbances.

On the Gila NF, vandalism and looting occur forest wide. There are documented cases of people vandalizing and looting sites adjacent to routes that provided access to the area. However, there are also documented cases where individuals have hiked several miles into Wilderness Areas to participate in these illegal acts. Knowing this, factors like site type, size, and visibility may be more accurate indicators of vandalism and looting than the distance a site is from a route.

Analysis for motorized routes in the FEIS includes an APE for roads and trails at 15 meters from the centerline of both. This change from the DEIS represents an effort to treat trails and roads similarly, to include information from recent TM surveys, and to include more area than may be disturbed by motorized use. Motorized dispersed camping corridors are analyzed at 300 feet either side of the road

centerline. This area represents the land that may be disturbed by motorized use for motorized dispersed camping corridors.

Some comments to the DEIS suggested using larger analysis areas for MDC corridors and the route system. In the FEIS, the measure of potential or relative risk of direct and indirect effects from designating newly proposed routes, motorized areas, MDC corridors, and MBGR is the number of known sites within the analysis area. The number of known sites within these areas is directly related to how many miles or acres are proposed for each action per Alternative. The Alternatives with higher numbers of miles and acres show higher numbers of known sites, and vice versa. Therefore, the alternatives proposing more miles or acres per action will pose a higher risk of these effects to cultural resources conversely those proposing fewer miles will pose a lower risk.

Given the new data from this analysis, the idea that relative risk is directly related to the number of miles or acres designated for these actions, and the knowledge that motorized cross-country travel will be prohibited through Travel Management; the Gila National Forest believes that this analysis area adequately measures and addresses indirect effects.

III. Effects on Cultural Resources

For all Alternatives, cultural resources (heritage resources) have been analyzed with respect to potential effects from four issues: newly proposed motorized routes, motorized dispersed camping (MDC), motorized big game retrieval (MBGR) and motorized areas. Because not all cultural surveys for TMR have been completed, existing survey data and known sites are used in this analysis.

Effects Common to All Alternatives

Roadside Parking

For all alternatives, vehicles will be able to park adjacent to roads within one vehicle length for dispersed camping purposes and other outdoor activities. The Forest Plan has always allowed this type of roadside parking, so there is no change from current condition for existing routes. Roadside parking adjacent to existing roads is exempt from Section 106 consultation under the TM Protocol, because continued motor vehicle use has already disturbed and compromised the integrity of cultural sites in these areas (USDA-Forest Service Southwestern Region; New Mexico State Historic Preservation Officer 2007).

The analysis area for motorized roads (15m either side of centerline) does capture roadside parking limits for those roads considered new undertakings. Roadside parking has potential to cause direct and indirect effects to cultural resources near roads. Direct effects may include, but are not limited to, vehicles driving over cultural sites causing disturbance to features and artifact displacement. In wet weather or sensitive soils, vehicles may cause rutting, compaction, and erosion which could disturb cultural deposits. Indirect effects of roadside parking may result from parking within walking distance of a site or within a site boundary, which can lead to dispersed camping in cultural sites, looting (opportunistic, inadvertent or purposeful), graffiti, and other site damage or destruction.

These effects may occur in all alternatives, but are correspondingly reduced as miles of newly designated roads are reduced. All Action Alternatives will substantially benefit the condition of cultural resources on Forest by greatly reducing miles of roads and roadside parking as compared to the current condition which includes motorized cross-country travel. Many fewer cultural resources will be subject to indirect effects from roadside parking, because parking may occur only along designated roads.

Looting and Vandalism:

In this analysis, looting and vandalism are recognized as potential indirect effects of motorized access to the forest. The current condition allows motorized cross-country travel over 2.44million acres where some 5,346 known sites are located. Direct and indirect effects of motorized cross-country travel include activities that recreationalists may participate in once they have reached their destination. These may include, but are not limited to, dispersed camping, fuel wood collection, hiking, etc. These kinds of activities may result in damage, dismantling or scavenging of historic or prehistoric sites for structural materials that can be used for fire rings or wood for fire; deliberate or opportunistic looting and artifact collecting; graffiti on historic and/or prehistoric features; and mixing of modern trash litter with historic artifacts or collection of historic trash mistaken for modern trash.

With the prohibition of motorized cross-country travel, the potential risk of these effects will decrease from the current condition. Action Alternatives that propose higher numbers of proposed miles and acres available for MDC corridors, motorized areas, MBGR, and newly proposed route designations will pose a higher relative risk of looting and vandalism than will those proposing lower numbers.

Effects Common to Alternatives C, D, E, F, AND G

Motorized Cross-Country Travel Prohibition

Motorized cross-country travel is prohibited under all Action Alternatives. This means that vehicular travel off the designated system would not be permitted, except as defined in appropriate MDC corridors, motorized areas, MBGR, or under a special use authorization. Vehicles must stay in the confines of routes or corridors for driving; access outside of these routes would be reduced to foot traffic or other authorized access (equestrians, pack animals, special uses, for example).

Studies in California, Utah, and National Parks demonstrate that off-road vehicle travel can result in direct and indirect effects to cultural resources (Long et al. 1999, Sampson 2007, Schiffman 2005). These can include, but are not limited to, vehicular contact with site features, artifact scatters and cultural deposits, deliberate or opportunistic looting, rutting or trail creation, and artifact collecting.

Under the current condition, motorized cross-country travel is allowed across 2.44 million acres. Approximately 5,346 known sites are found within that space. This has been allowed without specific Section 106 consultation and compliance for decades. Therefore, effects from these actions on cultural resources have gone unchecked. However, through the passage of the TM Rule, motorized cross-country travel is prohibited. Actions that may be proposed through the Action Alternatives like motorized dispersed camping corridors, motorized areas, and newly proposed route designations will require Section 106 consultation and compliance. This will allow archaeologists to assess and mitigate or avoid potential adverse effects to cultural resources from these actions, as appropriate. This is highly beneficial to cultural resources.

Prohibiting motorized cross-country travel under any of the Action Alternatives would be highly beneficial to cultural resources by reducing ease of access to sites located in areas that do not have designated routes. This would considerably reduce the potential for direct, indirect, and cumulative effects from motorized use. The potential risk of other indirect effects associated with recreational use of FS lands may be reduced because access would be limited to non-motorized traffic. However, foot traffic off routes can result in some indirect effects like looting or camping within a cultural site (Schiffman 2005). While this may be true, limitations on vehicle use are cited as one way to protect cultural resources (Spangler et al. 2006).

Motorized Routes

Motorized Routes provide ease of access to Gila NF lands and the cultural resources located within them. However, all Action Alternatives prohibit motorized cross-country travel which will greatly reduce motorized access to forest lands, and sites, from the current condition. The reduction of miles of motorized routes and prohibition of motorized cross-country travel in each Action Alternative are highly beneficial to cultural resources by reducing the number of cultural resources exposed to potential direct and indirect effects of motorized vehicle use.

The NEPA Analysis for Travel Management requires analyzing the change from the present condition. For motorized routes, the change is represented by the newly proposed route designations for each Action Alternative and the prohibition of motorized cross-country. As a result, the existing routes in each alternative are not analyzed. Instead, these numbers are presented and discussed generally within this section.

There are no newly proposed route designations in Alternative B. However, Alternative B does allow motorized cross-country travel. Analysis for motorized routes in the Action Alternatives consists of the

number of miles of new routes and the number of known sites within this area compared to the number of sites exposed to motorized cross-country in Alternative B.

The analysis area for routes is 15m on either side of the centerline for a total width of 30m. The average total widths of all newly proposed routes are either 8ft (2.4m) or 12ft (3.7m) wide (Table 5). Therefore, the route analysis width of 15m either side of the center line exceeds the land that will be disturbed by motorized use authorized, including roadside parking, under this decision.

Unless covered by previous complete survey from 1980 or later, all newly proposed routes will receive 100% survey. The survey for these new routes will follow the TM protocol. All previously recorded sites will be visited. Sites discovered or visited through this process will be assessed and potential adverse effects mitigated or avoided when appropriate. This will reduce the potential risk of known sites from effects of newly proposed motorized routes. Most of the new motorized routes have been surveyed, the remaining will be surveyed and go through Section 106 consultation and compliance before they appear on the MVUM.

Alternative B

There are no newly proposed route designations in Alternative B. Analysis of the route system shows that Alternative B has 5,432.11 miles of routes and 1,598 known sites within that area (Table 3). However, it must be considered that Alternative B allows motorized cross-country travel over 2.44 million acres which contains 5,346 known cultural sites.

While no newly proposed route designations are found in Alternative B, most of the miles being proposed in the other alternatives are user-created routes that have resulted from current motorized cross-country travel. These routes are the result of repeated use of off-road tracks. The others are being re-opened from closed or decommissioned status. While these routes are not supposed to be motorized, some of these are being used under the current condition.

Table 3 Displays the number of existing miles, number of proposed changes in the route system (Newly Proposed Route Designations), Total Miles , Change in number of miles of NFS motorized routes expressed as a percent from Alternative B, Total number of known eligible and unevaluated cultural sites, Change in # of known sites within NFS motorized routes as expressed as a percent (+or-) of Alternative B; (From Motorized Cross-Country), and Existing # of route miles proposed as non-motorized (does not include miles already Closed or Decommissioned) and # of known eligible and unevaluated sites.

Table 3. Gila National Forest known sites, routes, and proposed changes by alternative

Sites and Routes	Existing Condition Alt. B	Changes Proposed Alt. C	Changes Proposed Alt. D	Changes Proposed Alt. E	Changes Proposed Alt. F	Changes Proposed Alt. G
Existing # of route miles	5,432.11	5,287.76	4,197.73	3,560.59	4,557.85	4,528.06
Changes in route system (newly proposed route designations) in miles	N/A	204.52	93.19	11.93	119.62	118.88
Total miles	5,432.11 (2.44 million acres for motorized cross-country)	5,492.28	4,290.92	3,572.52	4,677.47	4,646.94
Change in number of miles of NFS motorized routes expressed as a percent (+or-) from Alt. B		+1.11%	-21.01%	-34.23%	-13.89%	-14.45%
Total number of known sites	1,598 (5,346 due to motorized cross-country)	1,613	1,376	1,139	1,453	1,444
Change in # of known sites within NFS motorized routes as expressed as a percent (+or-) of Alt. B (from motorized cross-country)		+1.01% (-69.83%)	-13.89% (-74.26%)	-28.72% (-78.69%)	-9.07% (-72.82%)	-9.64% (-72.99)
Existing # of route miles proposed as nonmotorized (does not include miles already closed or decommissioned) and # of known sites	0	143.90 45 Sites	1,228.15 387 Sites	1,856.38 668 Sites	873.80 294 Sites	903.60 308 Sites

Motorized cross-country travel and its effects on cultural resources have gone unchecked for many years. Under Alternative B, cultural resources may be at risk for direct effects related to vehicular contact. Vehicles may be driven over sites causing disturbance to features and artifact displacement. In wet weather or sensitive soils, vehicles may cause rutting, compaction, and erosion which could disturb cultural deposits.

Additional direct and indirect effects of motorized cross-country travel include activities that recreationalists may participate in once they have reached their destination. These may include, but are not limited to, dispersed camping, fuel wood collection, hiking, etc. These kinds of activities may result in damage, dismantling or scavenging of historic or prehistoric sites for structural materials that can be used for fire rings or wood for fire; deliberate or opportunistic looting and artifact collecting; graffiti on historic and/or prehistoric features; and mixing of modern trash litter with historic artifacts or collection of historic trash mistaken for modern trash.

Also, use of vehicles within or near sites may cause vegetation to become disturbed, thereby exposing soils. This may cause erosion which can displace artifacts and cultural deposits.

In all the Action Alternatives, motorized cross-country travel is prohibited. This is a great reduction in motorized access to forest lands, and will reduce direct and indirect effects like cars driving over sites, erosion, and rutting. Because motorized access would be limited, indirect effects like looting and camping-related disturbances may also decline. Even though the Action Alternatives add some route miles

to the system through newly proposed route designations, any of these Alternatives would create a better situation for cultural resources than Alternative B.

It should be noted that in all Action Alternatives existing number of route miles decline due to proposed non-motorized route closures (Table3). Dependent upon the Action Alternative, this reduction ranges from 143.9 to 1856.38 miles. The number of known sites found within this area ranges from 45-668 dependent upon the alternative. Route closure would be beneficial to these cultural resources because this reduces motorized access to forest lands and direct contact between vehicles and sites. Routes that are closed may also promote natural reclamation of the routes, including vegetation growth. This may also benefit cultural resources through stabilizing soil erosion.

Because motorized cross-country is prohibited in all Action Alternatives, it is worth comparing the percentage of sites that are located within the total road system to those found in Alternative B (Table 3). When comparing the Action Alternatives to Alternative B in this way, the number of known sites decline by 69.83%-78.69% dependent upon Alternative. It becomes apparent that any of the Action Alternatives will be better than the current condition.

Table 4. National Register Status of cultural sites located in newly proposed route designations

NR Status	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
Listed	0	0	0	0	0	0
Eligible	0	28	20	5	24	25
Unevaluated	0	21	7	1	9	9
Not Eligible	0	0	0	0	0	0
Total Number of Sites	0	49	27	6	33	34
Total Number of Known Sites Used in FEIS Analysis	0	49	27	6	33	34

Discussion of Newly Proposed Routes or the 'Changes in the Route System '

All of the Action Alternatives propose new routes (Table 5). These newly proposed routes would allow access to forest lands, and have the potential to cause direct and indirect effects to cultural resources. However, Alternative B allows motorized-cross country travel. This action allows motorized use on approximately 2.44 million acres of land which contains 5,346 known cultural sites. While adding some new routes to the system has the potential to increase effects to cultural resources, the prohibition of motorized-cross country and proposed closure of routes in all Action Alternatives reduces the overall effects to cultural resources through limitation of motorized use.

Table 5. Newly proposed routes listed by specific designation per alternative

Newly Proposed Route Designation	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G
Add unauthorized routes and designate as NFS trails for motorized vehicles less than 50 inches (Avg. Width 8 ft)	N/A	60.33 miles 10 sites	33.49 miles 4 sites	0 miles 0 sites	52.83 miles 9 sites	50.98 miles 9 sites
Add unauthorized routes proposed to be added to NFS roads system for periodic administrative use or specific permitted uses (written authorization) only (Avg. Width 12 ft)	N/A	26.54 miles 12 sites	27.03 miles 13 sites	3.51 miles 1 site	25.23 miles 12 sites	26.67 miles 13 sites
Add unauthorized routes for periodic administrative use or specific permitted uses (written authorization) only (Avg. Width 8 ft.)	N/A	2.53 miles 0 sites	2.53 miles 0 sites	2.53 miles 0 sites	2.53 miles 0 sites	2.53 miles 0 sites
NFS trails or unauthorized routes proposed to be added to NFS motorized single-track trail (Avg. Width 3 ft)	N/A	63.56 miles 15 sites	0 miles 0 sites	0 miles 0 sites	0 miles 0 sites	0 miles 0 sites
Add unauthorized routes to NFS roads open to all vehicle types (Avg. Width 12 ft)	N/A	7.19 miles 3 sites	5.75 miles 2 sites	1.85 miles 0 sites	5.35 miles 2 sites	6.62 miles 2 sites
Convert NFS closed or decommissioned roads to NFS trails for motorized vehicles less than 50" (Avg. Width 8 to 12 ft)	N/A	30.38 miles 4 sites	13.52 miles 3 sites	0 miles 0 sites	22.04 miles 5 sites	22.04 miles 5 sites
Re-open NFS ML1 closed or decommissioned roads to all vehicle types (Avg. Width 12 ft)	N/A	5.48 miles 0 sites	2.37 miles 0 sites	0.87 mile 0 sites	2.54 miles 0 sites	2.54 miles 0 sites
Re-open NFS ML1 closed or decommissioned roads to Admin or Written Authorization only (Avg. Width 12 ft)	N/A	8.50 miles 5 sites	8.50 miles 5 sites	3.18 miles 5 sites	8.50 miles 5 sites	8.50 miles 5 sites
Total Proposed # of Miles and # of Known Sites	N/A	204.52 miles/ 49 sites	93.19 miles/ 27 sites	11.93 miles/ 6 sites	119.62 miles/ 33 sites	118.88miles/ 34 sites
Total # of Analysis Acres	N/A	2,458.20	1,132.17	145.21	1,444.31	1,436.48
# of Acres Surveyed to Standard		1,029.17 (41.87%)	614.93 (54.31%)	32.22 (22.19%)	817.58 (56.61%)	809.43 (56.35%)

Note: The first number represents the miles of proposed action and the second is the number of known sites.

Common Effects of Alternatives C, D, E, F, and G:

Potential effects of the designation of newly proposed routes to cultural resources are very similar, if not the same, as those found in Alternative B for motorized cross-country travel. Cultural sites found within route prisms may be at risk for direct effects related to vehicular contact. Vehicles may be driven over sites causing disturbance to features and artifact displacement. In wet weather or sensitive soils, vehicles may cause rutting, compaction, and erosion which could disturb cultural deposits.

Additional direct and indirect effects of motorized route designation include activities that recreationalists may participate in once they have reached their destination. These may include, but are not limited to, dispersed camping, fuel wood collection, hiking, etc. These kinds of activities may result in damage, dismantling or scavenging of historic or prehistoric sites for structural materials that can be used for fire rings or wood for fire; deliberate or opportunistic looting and artifact collecting; graffiti on historic and/or prehistoric features; and mixing of modern trash litter with historic artifacts or collection of historic trash mistaken for modern trash.

Also, use of vehicles near or within sites may cause vegetation to become disturbed, thereby exposing soils. This may cause erosion which can displace artifacts and cultural deposits.

Beneficial Effects of Alternatives C, D, E, F, and G:

Beneficial effects of Alternatives C, D, E, F, and G are connected to the prohibition of motorized cross-country travel and closure of some existing routes.

In all the Action Alternatives, motorized cross-country travel is prohibited. This is a great reduction in motorized access to forest lands, and will reduce direct and indirect effects like cars driving over sites, erosion, and rutting. Because motorized access would be limited, indirect effects like looting and camping-related disturbances may also decline.

In the Action Alternatives, some existing motorized routes are proposed to become non-motorized (Table 3). These route closures would be beneficial to cultural resources because this reduces motorized access to forest lands and direct contact between vehicles and sites. Routes that are closed may also promote natural reclamation of the routes, including vegetation growth. This may also benefit cultural resources through stabilizing soil erosion.

Motorized cross-country travel has resulted in the creation of user-created routes. These routes were created without Section 106 consultation and compliance. Those user-created routes that are proposed to become part of the FS system and all other newly proposed routes will or have gone through this process. As a result, all sites discovered or visited within newly proposed routes will be or have been assessed for TM effects. Potential adverse effects will be mitigated or avoided, as appropriate.

Alternative C

Alternative C proposes about 204.52 miles of newly proposed routes (Table 6). There are 49 known sites within this area. The changes represented in Alternative C show a -99.06% difference in number of sites at risk for potential effects from Alternative B.

Table 6. Proposed route system changes and number of known sites by alternative

Sites and Routes	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G
Changes in route system (newly proposed route designations) in miles	N/A	204.52	93.19	11.39	119.62	118.88
Known sites	5,346 Sites (due to motorized cross-country)	49 Sites	27 Sites	6 Sites	33 Sites	34 Sites
Change in number of known sites expressed as a percent (+or-) from Alt. B	N/A	-99.08%	-99.49%	-99.89%	-99.38%	-99.36%

Alternative D

Alternative D proposes about 93.19 miles of newly proposed routes. There is a decrease of 99.49% in number of known cultural sites from Alternative B (Table 6). Alternative D provides a vast decrease in the number known sites at risk for potential effects from Alternative B and a small decrease from Alternative C.

Due to the reduction in number of known sites, relative risk of direct and indirect effects is greatly decreased from Alternative B and slightly from Alternative C.

Alternative E

Alternative E proposes about 11.93 miles of newly proposed routes. There is a decrease of 99.89%in number of known cultural sites from Alternative B (Table 6).

Alternative E proposes the least amount of newly proposed miles with the least number of known sites at risk for potential effects within those miles of all Action Alternatives. Therefore, it would also provide the least relative risk of direct and indirect effects of this action to cultural resources among all Action Alternatives. Also, beneficial effects associated with the prohibition of motorized cross-country travel would be greatest in Alternative E.

Alternative F

Alternative F proposes 119.62 miles of newly proposed routes. There is a decrease of 99.38% in the number of known cultural sites at risk for potential effects from Alternative B (Table 6). Alternative F reduces both the number of miles of proposed miles and known sites from Alternative C, but these numbers increase from Alternatives D and E.

With the reduction in the number of known sites from Alternative B and C, the relative risk of direct and indirect effects of proposed motorized routes to known sites in Alternative F is decreased. With the increase of known sites from Alternatives D and E, this relative risk increases in Alternative F.

Alternative G

Alternative G proposes about 118.88 miles of newly proposed routes. There is a decrease of 99.36% in number of known cultural sites at risk for potential effects from Alternative B (Table 6). Alterative G reduces both number of proposed miles and known sites from Alternative C, these numbers are very similar to Alternative F and an increase from Alternatives D and E.

With the number of known sites, the relative risk of direct and indirect effects seen in Alternative G is greatly decreased from Alternative B and slightly decreased from Alternative C. The relative risk of direct

and indirect effects seen in Alternative G is very similar to Alternative F and an increase from Alternatives D and E.

Motorized Dispersed Camping Corridors

Motorized Dispersed Camping (MDC) corridors may be allowed up to 300 feet on either side of designated roads. These corridors are meant solely for the purpose of motorized dispersed camping. This means driving into a camping spot, setting up camp, and using that camp as a base from which to recreate. This is a traditional use of places adjacent to Forest System roads. MDC corridors would not be available for unrestricted motor vehicle use.

Unless covered by previous complete survey from 1980 or later, all camping corridors with high cultural site density will receive 100% survey of the total 600 foot corridor (300 feet on either side of the road's centerline). Sample survey may take place in camping corridors with low site density (Firebaugh and Knolles 2012). All previously recorded sites within the camping corridors will be revisited. Sites discovered or visited through this process will be assessed and potential adverse effects mitigated or avoided, as appropriate. This will reduce the potential risk of known sites from effects of MDC. Most of the MDC corridors have been surveyed, the remaining will be surveyed and go through Section 106 consultation and compliance before they appear on the MVUM.

Table 7. NRHP status of sites within corridors

National Register Status	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
Listed	10	0	0	0	0	0
Eligible	1,693	494	371	0	422	437
Unevaluated	3,643	489	286	0	422	318
Not Eligible	402	112	84	0	107	93
Total Number of Sites	5,748	1,095	741	0	951	848
Total Number of Known Sites Used in FEIS Analysis	5,346	983	657	0	844	755

Effects Common to Alternatives B, C, D, F, and G:

Direct effects related to MDC, may include but are not limited to, vehicular contact. Vehicles may be driven over sites causing disturbance to features and artifact displacement. In wet weather or sensitive soils, vehicles may cause rutting and erosion that could disturb cultural deposits.

Additional direct and indirect effects of MDC relate to camping activities that may include, but not be limited to, dismantling or scavenging historic or prehistoric sites for structural materials that can be used for fire rings or wood for fire; deliberate or opportunistic looting and artifact collecting; graffiti on historic and/prehistoric features; and mixing of modern trash litter with historic artifacts or collection/removal of historic trash mistaken for modern trash.

Also, use of vehicles near or within sites may cause vegetation to become disturbed, thereby exposing soils. This may cause erosion which may displace artifacts and cause disturbances to cultural deposits.

Table 8. Motorized dispersed camping corridor acres available by alternative

Motorized Dispersed Camping Corridor Acres and Sites	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G
Number of acres available	2.44 million	108,180	84,388	0	101,915	94,008
Change in number of acres of motorized dispersed camping corridors expressed as a percent (+ or -) of alternative B		-96%	-97%	-100%	-96%	-96%
Number of known cultural sites	5,346	983	657	0	844	755
Change in number of known cultural sites within motorized dispersed camping corridors expressed as a percent (+ or -) of alternative B		-82%	-88%	-100%	-84%	-86%
Acres Surveyed to Standard	395,483 (16%)	72,383 (67%)	60,342 (72%)	N/A	69,178 (68%)	66,546 (71%)

Beneficial Effects Common to Alternatives C, D, E, F, and G:

Beneficial effects would increase as acres available for MDC are reduced and MDC corridors are designated. Reducing MDC to specific corridors would help reduce the potential of direct and indirect effects to cultural sites. Sites located outside MDC corridors should benefit from this action because vehicles would not be allowed to drive outside road corridors except as defined for MDC, MBGR, motorized areas, or special use. These beneficial effects are common to Alternatives C, D, E, F, and G.

Beneficial Effects Common to Alternatives C, D, F, and G:

MDC corridors proposed in Alternatives C, D, F, and G require Section 106 consultation and compliance before they appear on the MVUM. As a result, all sites discovered or visited within proposed MDC corridors will be or have been assessed for TM effects. Any potential adverse effects will be mitigated or avoided, as appropriate. Currently, the Forest Plan allows MDC without Section 106 consultation and compliance which may be causing some effect to cultural resources.

Alternative B

Alternative B allows motorized dispersed camping on 2.44 million acres of Gila NF lands (Table 8). There are about 5,346 known cultural sites within this area.

Alternative C

Changes under Alternative C result in about 108,180 acres available for MDC corridors, a reduction of 96% in acres from Alternative B (Table 8). This Alternative shows a reduction of 82% in number of known sites from Alternative B. Alternative C greatly reduces the number of acres available for MDC and known sites from Alternative B.

Alternative C provides a lower relative risk of direct and indirect effect to known sites when compared to Alternative B due to the great reduction of number of known sites.

Alternative D

Changes under Alternative D result in 84,388 acres for MDC corridors, a reduction of 97% from the acres in Alternative B (Table 8). This Alternative also has a reduction of 88% in number of known sites from Alternative B. Alternative D greatly reduces the number of acres and known sites in comparison to Alternative B and provides a reduction from Alternative C. This reduction would benefit cultural resources both inside and outside the MDC corridors.

With the reduction in number of known sites, Alternative D provides a lower relative risk of direct and indirect effects to known sites than Alternatives B and C.

Alternative E

Alternative E does not propose MDC corridors (Table 8). This would be a 100% reduction in acres and known sites from Alternative B. Therefore, this alternative poses no potential risk to cultural resources from MDC corridors. Dispersed camping may still occur, but motorized access to dispersed camping sites would not be allowed. Alternative E provides the most beneficial effects to cultural resources.

Alternative F

Changes under Alternative F result in about 101,916 acres for MDC corridors, a reduction of 96% from Alternative B (Table 8). There is a reduction of 84% in number of known sites from Alternative B. This alternative reduces the number of acres available for MDC and known sites from Alternatives B and C, but increases acres and known sites from Alternatives D and E. Alternative F provides greater potential beneficial effects than Alternatives B and C given the reduction in number of known sites that could potentially be at risk for direct and indirect effects, but these beneficial effects are not as great as in Alternatives D and E.

With the reduction of known sites from Alternatives B and C, Alternative F provides a lower relative risk of such effects. With the increase of known sites from Alternatives D and E, Alternative F provides a higher relative risk of these types of effects.

Alternative G

Changes under Alternative G result in about 94,008 acres for MDC corridors, a reduction of 96% from Alternative B (Table 8). This Alternative shows a reduction of 86% in the number of known cultural sites from Alternative B. This alternative reduces the number of acres and known sites compared to Alternatives B, C, and F, these slightly increase from Alternative D, and greatly increase from Alternative E. Alternative G provides greater potential beneficial effects than Alternatives B, C, and F given the reduction in number of known sites that could potentially be at risk for direct and indirect effects, but these beneficial effects are not as great as in Alternatives D and E.

With the reduction of known sites from Alternatives B, C, and F, Alternative G provides a lower relative risk of such effects. With the increase of known sites from Alternatives D and E, Alternative G provides a higher relative risk of these types of effects.

Motorized Big Game Retrieval

Motorized Big Game Retrieval allows hunters to retrieve downed animals using motorized cross-country travel. Hunters cannot hunt from their vehicles, so they are limited to using the vehicle for retrieval only. Because this action is limited, seasonal, and occurs over a vast area, the probability of any one cultural site being driven over by any one hunter is minimal. Therefore, this action poses only a slight potential of risk to cultural resources (refer to MBGR Assumptions).

However, this activity provides limited ease of motorized access to Forest lands and cultural resources located within them. Each Alternative has a proposed corridor distance for MBGR. The reduction in acres for this activity will directly relate to reduction in number of cultural resources having potential risk of direct and indirect effects associated with MBGR. Analysis for MBGR uses the number of acres proposed per Alternative and the number of known cultural sites, compared to the number of potential acres of disturbance from MBGR activities (Table 10).

Common Effects to Alternatives B, C, D, F, and G:

Direct and indirect effects of MBGR would be similar in scope to other motorized-cross country activities. Vehicles may be driven over sites causing disturbance to features and artifact displacement. In wet weather or sensitive soils, vehicles may cause rutting, compaction, and erosion which could disturb cultural deposits. The nature of MBGR should not bring about continued use of a vehicle in one place. There is also potential for disturbance of vegetation within a site, causing erosion which may displace artifacts and impact cultural deposits. Under Alternatives B, MBGR provides access to remote places on the Forest, which has the potential to result in deliberate or opportunistic looting and artifact collecting. There is also varying potential for this effect with Alternatives C, F, D and G, however, relative risk would be directly related to the number of known sites and number of proposed acres for the activity. The lower the number of known sites and proposed acres, the lower the relative risk.

Alternative B

Alternative B allows unlimited motorized access for game retrieval on 2.44 million acres containing 5,346 known sites (Table 10). Disturbance acreage/year was not determined for Alternative B (Table 10). However, general information about Alternative B indicates this disturbance to be somewhat comparable to Alternative C, yet, at least slightly larger. For Alternative B, game retrieval is not limited by any species or distance from road. In the current condition, there are no guidelines on how to use the retrieval vehicle. A hunter is allowed to take any route through the Forest to get to the downed animal. This provides some indication that disturbance acreage for Alternative B would be slightly larger than that seen in Alternative C (Table 10).

Table 9. Number of known cultural sites per alternative within the proposed designated distance for motorized big game retrieval

NR Status	Alt. B # of Known Sites	Alt. C # of Known sites (1 mile)	Alt. D # of Known sites (300 ft along Designated MDC corridors)	Alt. E # of Known sites (No MBGR)	Alt. F # of Known sites (1/2 Mile)	Alt. G # of Known sites (300 ft along Designated MDC corridors)
Listed	10	9	0	0	5	0
Eligible	1,693	1,677	371	0	1,577	437
Unevaluated	3,643	3,496	286	0	3,139	318
Not Eligible	402	351	84	0	323	93
Total Number	5,748	5,532	741	0	5,044	848
Total Number of Known Sites Used in FEIS Analysis	5,346	5,181	657	0	4,721	755

Alternative C: 1 mile from roads, elk, deer, bear, mountain lion, javelina and antelope

Changes to Alternative C limits motorized retrieval to six species within one mile of open roads. About 2.08 million acres are available for MBGR, a reduction of 15% of Forest lands available for this action and a reduction of 3% of known sites when compared to Alternative B. Possible total disturbance acreage per year is about 4,852.5 acres (Table 10).

Due to the reduction in number of sites, Alternative C shows a small reduction in the relative risk of direct and indirect effects to known sites from Alternative B.

Alternative D: 300 feet from open roads, deer and elk

Changes provided in Alternative D result in MBGR being allowed only within MDC corridors. This includes about 84,388 acres. This is a reduction of 97% of Forest lands available for this action and a reduction of 88% of known sites when compared to Alternative B. Because harvest is limited to deer and elk, the possible acreage disturbance is 220 acres/year (Table 10).

With the known number of sites, Alternative D poses a much lower relative risk of direct and indirect effects to known sites than do Alternatives B and C due to the great reduction of known sites and greatly reduces the number of known sites that have a potential risk of direct and indirect effects when compared to Alternatives B and C.

Table 10. Motorized big game retrieval acres, proposed changes and number of known sites by alternative

Motorized Big Game Retrieval Acres* and Sites	Existing Conditions Alt. B	Changes Proposed Alt. C	Changes Proposed Alt. D	Changes Proposed Alt. E	Changes Proposed Alt. F	Changes Proposed Alt. G
Acreage available for motorized big game retrieval (MBGR)	2.44 million	2.08 million	84,388	0	1.51 million	94,008
Change in number of acres of MBGR expressed as a percent (+or-) of alternative B		(-15%)	-97%	-100%	-38%	-96%
Known sites within MBGR areas	5,346	5,181	657	0	4,721	755
Change in number of known sites within MBGR expressed as a percent (+or-) of alternative B		-3%	-88%	-100%	-12%	-86%
Number of possible disturbance acreage per year		4,852.5	220	0	953.3	220
Number of acres surveyed to standard	395,483 (16%)	382,275 (18%)	60,342 (72%)	N/A	342,392 (23%)	66,546 (71%)

* All numbers are rounded to the nearest whole number).

In Alternative D, MBGR would only be allowed in MDC corridors. These corridors will go through Section 106 consultation and compliance as described in the MDC corridor section. Individual camping corridors, and MBGR corridors in Alternative D, will not appear on the Motor Vehicle Use Map until this is complete. This process will help identify cultural resources within MBGR corridors for Alternative D. These sites will be assessed, and potential adverse effects mitigated or avoided, as appropriate. This will be highly beneficial to cultural resources located within MBGR for this Alternative D.

Alternative E: No motorized big game retrieval

Alternative E does permit MBGR (Table 10). This alternative poses no potential risk to cultural resources and is a 100% reduction in relative risk of direct and indirect effects to known sites from Alternative B and all other Alternatives.

Alternative F: ½ mile from open roads, elk only

Changes represented by Alternative F result in motorized retrieval of elk only from within one-half mile of open roads. Alternative F reduces MBGR to 1.51 million acres. This is a reduction of 38% of Forest lands available for MBGR and a reduction of 12% of known sites when compared to Alternative B. Because retrieval is reduced to elk, the possible disturbance acreage/year is 953.3 acres (Table 10).

With the known number of sites, this alternative reduces the relative risk of direct and indirect effects to known sites when compared to Alternatives B and C, but increases the potential risk of effects compared to Alternative E and D.

Alternative G: 300 feet on roads where MDC is allowed, deer and elk

Changes in Alternative G result in MBGR only allowed within MDC corridors which includes about 94,008 acres. This is a reduction of 96% of Forest lands available for MBGR and a reduction of 86% of known sites when compared to Alternative B. Possible disturbance acreage at this distance is about 220 acres/year (Table 10).

With number of known sites, Alternative G reduces the relative risk of direct and indirect effects to known sites from Alternatives B, C, and F; is comparable to Alternative D; and is an increase from Alternative E.

In Alternative G, MBGR would only be allowed in MDC corridors which will go through Section 106 consultation and compliance, as described in the MDC corridor section. This process will help identify cultural resources within MBGR corridors for Alternative G. These sites will be assessed, and potential adverse effects mitigated or avoided, as appropriate. This will be highly beneficial to cultural resources located within MBGR for this Alternative.

Motorized Areas

Thirty-seven motorized areas have been proposed in Alternatives C, F, and G. These motorized areas allow any type of motorized vehicle activity within them, but 36 of the 37 have traditionally been used as camping areas and this is the expected ongoing use. The remaining motorized area is located on the Reserve Ranger District, and open to unrestricted OHV and motorcycle use. This 3.31 acre motorized area is located within a borrow pit near an old landfill.

Unless covered by previous complete survey from 1980 or later, all motorized areas will receive 100% survey. All previously recorded sites will be visited. Sites found within motorized areas will be assessed and potential adverse effects mitigated or avoided, as appropriate. This will reduce the potential risk of known sites from effects of motorized areas.

Table 11. National Register status of sites within motorized areas

National Register Status	Alt. B*	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G
Listed	10	0	0	0	0	0
Eligible	1,691	0	0	0	0	0
Unevaluated	3,645	1	0	0	1	1
Not Eligible	402	0	0	0	0	0
Total Number of Known Sites	5,748	1	0	0	1	1
Total Number of Known Sites Used in FEIS Analysis	5,346	1	0	0	1	1

*For Alternative B, number of cultural sites within acres of similar use as Motorized Areas is shown

Alternative B

There are no designated motorized areas in Alternative B. However, motorized cross-country travel and MDC are allowed in Alternative B. These activities are similar in scope to those that would occur in motorized areas. They also pose similar potential effects to cultural resources. Alternative B allows motorized cross-country travel and MDC upon 2.44 million acres. There are about 5,346 known cultural sites within this area (Table 12).

Effects from MDC and motorized cross-country travel mirror those that would occur in motorized areas. Vehicles may be driven over sites causing disturbance to features and artifact displacement. In wet weather or sensitive soils, vehicles may cause rutting and erosion that could disturb cultural deposits.

Additional direct and indirect effects of motorized dispersed camping in motorized areas include, but may not be limited to, dismantling or scavenging historic or prehistoric sites for structural materials that can be used for fire rings or firewood; deliberate or opportunistic looting and artifact collecting; graffiti on historic and/or prehistoric features; mixing of modern trash litter with historic artifacts or collection of historic trash mistaken for modern trash.

Table 12. Acreage and sites by alternative

Acreage and Sites	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G
Number of known sites	5,346	1	0	0	1	1
Acres for traditional camping	2.44 million	23.69	0	0	23.69	23.69
Acres for OHV play	2.44 million	3.31	0	0	3.31	3.31
Total acres	2.44 million	27	0	0	27	27
Total acres surveyed to standard	421,709 (12%)	19.3 (71.48%)	0	0	19.3 (71.48%)	19.3 (71.48%)

Alternatives C, F, and G:

Changes incorporated in Alternatives C, F, and G result in 36 motorized areas traditionally used for camping. These motorized areas comprise a total of 23.69 acres; the majority of them are less than one acre in size. Only one known cultural site is located partially within a motorized area. The changes represented in Alternatives C, F, and G result in a great reduction of acres and known sites from Alternative B, which allows similar activities on 2.44 million acres with 5,346 known sites (Table 12).

The effects of camping to cultural resources in motorized areas are the same as seen in Alternative B. This action reduces the potential for direct and indirect effects from 5,346 cultural sites in Alternative B to 1 site within Alternatives C, F, and G for this action.

Motorized areas would be delineated to help recreationalists identify their boundaries. This would decrease the potential for effects to cultural resources near motorized areas. Most motorized areas have been surveyed, the remaining will be surveyed and go through Section 106 compliance before they appear on the MVUM. This should further decrease the relative risk of direct and indirect effects to known sites when compared to Alternative B.

The 3.31 acre motorized area open to unrestricted OHV and motorcycle use has been surveyed and does not have any cultural resources. There would be no potential risk to cultural resources in this motorized area due to OHV activities being limited to this specific location.

Alternatives D and E

Alternatives D and E do not permit motorized areas. These alternatives pose no potential risk to affect cultural resources and are a 100% reduction in potential effects from Alternative B, C, F and G.

Lower San Francisco Wilderness Study Area (WSA)

During the comment period for the Draft EIS, many concerns and issues related to motor vehicle use and access to the Lower San Francisco River Wilderness Study Area (WSA) were received. The concerns and issues generated the need for the Forest to specifically address and analyze the effects of the alternatives in this particular area and associated routes.

The potential direct, indirect, and beneficial effects to cultural resources are the same as mentioned above within the motorized routes, MDC corridor, MBGR, and motorized area sections. All analysis methods are the same for each issue per Alternative. However, the extent of the analysis is the Lower San Francisco Wilderness Study Area. The WSA is about 7,132 acres. About 2,988 acres are located within an OHV prohibited area. The remaining 4,144 acres of the WSA is open to vehicular use.

This area includes FR 4223 L and a small portion of FR 68.

The Lower San Francisco WSA has not been widely surveyed by the Forest Service. As a result, not many known sites are found within the area. This area is rocky and steep, much of it exceeds 40% slope. However, this type of terrain may contain certain types of sites.

Due to the steep terrain, not many areas within the WSA would be easily accessible for MBGR or MDC. If an alternative is chosen that proposes MDC corridors, these areas will be surveyed as described in the sections above. Any sites located or visited would be assessed for TM effects and potentially adverse effects avoided or mitigated, as appropriate.

Motorized Routes

Alternative B

Analysis of the current route system in the Lower San Francisco WSA shows about 8.28 miles of existing routes with no known sites. However, motorized cross-country travel is allowed on 4,144 acres within the WSA. Analysis of this portion of the WSA shows that one known site is within that area (Table 13 and Table 14). As stated above, all Action Alternatives prohibit motorized cross-country travel.

Table 13. Displays the number of existing miles, number of proposed changes in the route system (Newly Proposed Route Designations), Total Miles and Change in number of miles of NFS motorized routes expressed as a percent from alternative B.

Miles and Changes in Route System	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G
Number of Existing Miles of Routes (rounded to the nearest 100th)	8.28	8.07	0.48	0	8.07	0.48
Changes in Route System (Newly Proposed Route Designations) in Miles	N/A	0	0.29	0	0	0.29
Total Number of Miles (Change in # of Miles from Alternative B expressed as a Percent (+or-)	8.28	8.07 (-2.54%)	0.77 (-90.70%)	0 (-100%)	8.07 (-2.54%)	0.77 (-90.70%)

Alternatives C, E, and F

No newly proposed routes are proposed for Alternatives C, E, and F. There would be no potential risk for cultural resources within these Alternatives. Therefore, this would be a 100% reduction from Alternative B (Table 14).

Table 14. Type of Newly Proposed Route Designated, Number of Known Sites within Analysis Area, Change in Number of Sites Expressed as a Percent (+or-) from alternative B, Total Number of Analysis Acres, and Total Number of Acres Surveyed (Percent Surveyed).

Newly Proposed Route Designation within Lower San Francisco WSA	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G
Add unauthorized routes to NFS roads open to all vehicles	N/A	0	0.29	0	0	0.29
# of Known Sites	1 (due to Motorized Cross-Country Travel)	0 sites	0 sites	0 sites	0 sites	0 sites
Change in Number of Known Sites Expressed as a Percent (+or-) from Alt. B	N/A	-100%	-100%	-100%	-100%	-100%
Total # of Analysis Acres	N/A	0	3.66	0	0	3.66
Total # of Acres Surveyed to Standard (% surveyed, rounded to the nearest 100th)	N/A	0	3.58 (97.77%) Note: The remaining 0.08 does not require survey due to steep slope.	0	0	3.58 (97.77%) Note: The remaining 0.08 does not require survey due to steep slope.

Alternatives D and G:

Alternatives D and G propose about 0.29 miles of newly proposed routes. This area has been surveyed and there are no known sites within the surveyed area. There would be no potential risk of direct or

indirect effects for cultural resources within these Alternatives. This would be a 100% reduction from Alternative B (Table 14).

Motorized Dispersed Camping Corridors

Alternative B

In Alternative B, MDC is allowed over 4,144 acres within the Lower San Francisco WSA. There is one known site within this area.

Table 15. MDC Corridor Acres Available by Alternative with Change in Number of Acres Expressed as Percentage of Alternative B; Number of Sites per Alternative; Change in Number of Sites Expressed as Percentage of Alternative B and Number of Acres Surveyed to Standard.

MDC Corridor Acres, Sites, and Changes	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G
# of Acres Available and Change in Number of Acres of MDC corridors Expressed as a Percent (+/-) of Alternative B	4,144	580 (-86.00%)	0.3 (-99.9927%)	0 (-100%)	38 (-99.08%)	0.3 (-99.9927%)
Known Sites	1	1	0	0	1	0
Change in Number of Known Sites Expressed as a Percent (+or-) from Alt. B		0%	-100%	-100%	0%	-100%
Acres Surveyed to Standard (% Surveyed)	169.94 (4.10%)	140.72 (24.26%)	0.00 (0%) Note: Survey Not Required due to Steep Slope	0 (0%)	17.98 (47.32%)	0.00 (0%) Note: Survey Not Required due to Steep Slope

Alternative C

Changes in Alternative C result in about 580 acres available for MDC corridors, a reduction of 86.00% from Alternative B (Table 15). This Alternative also has one known site within it. Alternative C reduces the number of acres available for MDC, but has equal relative risk of direct and indirect effect to known sites when compared to Alternative B.

Alternatives D and G

Alternatives D and G propose 0.3 acres of MDC corridors within the Lower San Francisco WSA, a reduction of 99.9927% from Alternative B (Table 15. There are no known sites within this area. This is a 100% reduction in potential risk to cultural resources compared to Alternative B and C.

Alternative E

Alternative E does not propose MDC corridors along the routes in the Lower San Francisco WSA. Therefore, this alternative would not affect known cultural resources in this area. This would be a 100% reduction in potential risk to cultural resources when compared to Alternative B and C (Table 15).

Alternative F

Changes in Alternative F result in about 38 acres available for MDC corridors, a reduction of 99.08% from Alternative B (Table 15). This Alternative also has one known site within it. Alternative B reduces the number of acres available for MDC, but has equal relative risk of direct and indirect effect to known sites when compared to Alternatives B and C, and less relative risk than Alternatives D, E, and G.

Motorized Big Game Retrieval

Alternative B

Alternative B allows MBGR on 4,144 acres within the Lower San Francisco WSA (Table 16). There is one known site within this area.

Table 16. Acreage Available for MBGR; Change in Number of Acres of MBGR Expressed as a Percent of Alternative B; Number of Known Sites within MBGR areas; Change in Number of Known sites of MBGR Expressed as a Percent of Alternative; and Number of Acres Surveyed to Standard.

MBGR Acreage, Sites, and Changes	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Alt. G
# of Acres Available and Change in Number of Acres of MBGR Expressed as a Percent (+/-) of Alternative B	4,144	4,063 (-1.95%)	0.3 (-99.9927%)	0 (-100%)	3,329 (-19.67%)	0.3 (-99.9927%)
Known Sites	1	1	0	0	1	0
Change in Number of Known Sites Expressed as a Percent (+or-) from Alt. B		0%	-100%	-100%	0%	-100%
Surveyed to Standard	N/A	169.94 (4.18%)	0.00 (0%) Note: Survey Not Required due to Steep Slope	0.0 (0%)	153.01 (4.60%)	0.00 (0%) Note: Survey Not Required due to Steep Slope

Alternative C

Changes in Alternative C result in about 4,063 acres available for MBGR, a reduction of 1.95% from Alternative B (Table 16). This Alternative also has one known site within it. Alternative C reduces the number of acres available for MBGR, but has equal relative risk of direct and indirect effect to known sites when compared to Alternative B.

Alternatives D and G

Alternatives D and G proposes 0.3 acres of MBGR within the Lower San Francisco WSA, a reduction of 99.9927% from Alternative B (Table 16). There are no known sites within this area. This is a 100% reduction in potential risk to cultural resources with compared to Alternatives B and C.

Alternative E

Alternative E does not propose MBGR along the routes in the Lower San Francisco WSA. Therefore, this alternative would not affect cultural resources in this area. This would be a 100% reduction in potential risk to cultural resources when compared to Alternatives B and C.

Alternative F

Changes in Alternative F result in about 3,329 acres available for MBGR, a reduction of 19.67% from Alternative B (Table 16). This Alternative also has one known site within it. Alternative F reduces the number of acres available for MBGR, but has equal relative risk of direct and indirect effect to known sites when compared to Alternatives B and C, and less relative risk than Alternatives D, E, and G.

Motorized Areas

Alternative B

There are no designated motorized areas in Alternative B. However, motorized cross-country travel and MDC are allowed in Alternative B. These activities are similar in scope to those that would occur in motorized areas. They also pose similar potential effects to cultural resources. Alternative B allows motorized cross-country travel and MDC upon 4,144 acres. There is one known site within this area.

Alternatives C, D, E, F, and G

Alternatives C, D, E, F, and G do not propose motorized areas within the Lower San Francisco River WSA. Therefore, there is no potential risk to cultural resources due to this action in this area. This would be a 100% reduction in potential risk of direct and indirect effect when compared to Alternative B.

Summary of San Francisco River Analysis

As this analysis shows, there is little survey in this area and very few known sites. Due to the steep terrain, not many areas within the WSA would be easily accessible by vehicle for MDC or MBGR. Motorized Areas are not proposed. The newly proposed routes have already gone through the Section 106 process and no cultural resources were located within them. If one of the Action Alternatives that proposes MDC corridors on these routes is chosen, they will go through the Section 106 compliance and consultation before appearing on the MVUM. Any potential effects to cultural resources will be addressed through this process.

Conclusions on Direct and Indirect Travel Management Effects to Cultural Resources

Alternative B provides the maximum potential of motorized access to forest service lands through motorized cross-country travel. This action allows motorized use on 2.44 million acres where some known 5,346 sites are located. All other Alternatives prohibit motorized cross-country travel (except as defined for Motorized Areas, MDC corridors, MBGR, and Administrative use/ written authorization) limiting the number of sites that may be exposed to potential direct and indirect effects. Therefore, Alternative B provides the highest relative risk of direct and indirect effects when compared to all other Alternatives.

Changes presented in Alternative C result in the most mileage for routes, the greatest acreage for MDC corridors, the greatest distance for MBGR, and motorized areas of all Action Alternatives. Outside of Alternative B, Alternative C provides the highest relative risk of direct and indirect effects to cultural resources.

Changes presented in Alternative D result in the second least potential risk for direct and indirect effects and the second highest potential beneficial effects to cultural resources following Alternative E. . Alternative D results in fewer route miles/acres, less acreage for MDC and MBGR than seen in Alternative B or proposed in Alternatives C, F, and G. Alternative D does not propose any motorized areas, unlike Alternatives C, F, and G. This means Alternative D provides a lower relative risk of direct or indirect effects to cultural resources when compared to Alternatives B, C, F, and G.

Changes presented in Alternative E result in the least potential for direct and indirect effects and the highest potential beneficial effects to cultural resources of all alternatives. Alternative E proposes the lowest number of miles/acres for routes, no MDC corridors, no MBGR, and no motorized areas. Alternative E provides the lowest relative risk to cultural resources when compared to all other Alternatives.

Alternative F proposes less mileage/acreage for routes than seen in Alternative B or proposed in Alternative C; comparable to Alternative G; and more than Alternatives D and E. Alternative F proposes less MDC acreage than seen in Alternative B or proposed in Alternative C and more than Alternatives D, E, and G. Alternative F proposes less MBGR acreage than seen in Alternative B or proposed in Alternative C, and more than Alternatives D, E, and G. Alternative F proposes the same acreage of motorized areas as do Alternatives C and G. Alternative F presents higher potential beneficial effects to cultural resources than Alternatives B and C, but less than Alternatives D, E, and G. Changes in Alternative F result in less relative risk of direct and indirect effects to cultural resources when compared to Alternatives B and C, but a higher relative risk when compared to Alternatives D, E, and G.

Alternative G proposes less mileage/acreage for routes than seen in Alternative B or proposed in Alternative C; comparable to Alternative F; and more than Alternatives D and E. Alternative G proposes less MDC acreage than seen in Alternative B or proposed in Alternatives C and F; comparable to Alternative D; and more than Alternative E. Alternative G proposes less MBGR acreage than seen in Alternative B or proposed in Alternatives C and F; comparable to D; and more than Alternative E. Alternative G proposes the same acreage of motorized areas as do Alternatives C and F. Alternative G presents higher potential beneficial effects to cultural resources than Alternatives B and C, but less than Alternatives D, E, and F. Changes presented in Alternative G result in less relative risk for direct and indirect effects to cultural resources when compared to Alternatives B, C, and F, but poses a higher relative risk when compared to Alternatives D and E.

Cumulative Effects

Cumulative effects to cultural resources relate to potential effects to National Register-eligible or unevaluated properties resulting from incremental impacts of TM actions when added to other past, present, and reasonably foreseeable future actions that cause ground disturbing activities. Cumulative effects for TM are based upon the boundary of the Gila National Forest and extend about five years into the future.

Since the National Historic Preservation Act (NHPA) was fully implemented in the 1970s, cultural resource surveys have been conducted and potential effects to cultural resources addressed through consultation between the Gila NF, SHPO, Tribes, Advisory Council on Historic Preservation and interested public. Future projects occurring on Gila NF lands will require appropriate compliance with NHPA including cultural resources inventories and evaluation of effects of the undertaking. If effects are identified, they will be addressed by the Gila NF in consultation with SHPO and other consulting parties under the Section 106 process of the NHPA. Adverse effects will be minimized through avoidance or mitigation measures, as appropriate.

Past Projects

About 4,389 past projects have occurred on the Gila NF dating since the 1970s to July 2013. In addition to routine NHPA compliance, some projects are related to Archeological Resources Protection Act (ARPA), Native America Graves Protection and Repatriation Act (NAGPRA) or Section 110 of the NHPA including public outreach, monitoring, data recovery plans, excavations, volunteer projects, damage assessments, inventorying collected materials, etc. These types of projects may or may not have affected specific cultural sites located in the current TM project area. This list of projects represents an overview of the type and magnitude of past archaeological work on the Gila NF.

Most of these projects can be divided into a number of project types including: Heritage/Archaeology; Construction and Maintenance; Fire; Land/Survey; Mining; Range; Roads; Soil/Watershed; Timber; Utilities; and Wildlife. Table 17 lists these project types along with some examples of the projects carried out on Forest.

Table 17. Types of projects that have occurred on the Gila NF with NHPA compliance since 1980

Project Type	Project Examples
Heritage/Archaeology	Section 110; Para-professional Archeologist Inventory; Deferred Maintenance; NAGPRA; ARPA investigations; Interpretation; Data Recovery; Passport In Time; Education Outreach; Field Schools; FOIA searches; Damage Assessments; Special Use Permits
Fire	Prescribed Burns; Fire Lines; Heliport; Landing Strip; Training Area; Hand Lines
Construction and Maintenance	Administrative Site Improvement; Demolition of Buildings; Parking Lots; Landfill Extension
Lands/Survey	Acquisition; Exchanges; FS Property Fence Lines
Mining	Exploration; Closures/Waste Removal; Abandoned Mine Lands Projects
Range	Allotments; Fences; Cattle guards; Corrals; Traps; Water/Drink Tanks
Recreation	Trail Building/Maintenance; Campground Improvements; Toilet installations; Signing
Roads	Opening; Closing; Bridges; Culverts; Easements; Quarries; Erosion Controls; Temporary Road Closures and Openings; Plating; R-O-W work
Soil/Watershed	Soil Terrestrial Ecosystem Survey; Watershed Improvements; Water Gap Fences; Channel Alignments; Groundwater Monitoring; Well Drill Pads; Spring/Seep Development
Timber	Tree Planting; Fuel wood Harvest; Thinning; Timber/Salvage Sales; Vegetation Management; Christmas Trees
Wildlife	Wildlife Studies/Improvements; Fish Structures; Enclosures; Exclosures
Utilities	Pipelines; Phone Lines; Power Lines; Fiber-optic Cables

The NHPA became law in 1966, but was not fully implemented until the mid-1970s after the passage of the Archeological and Historic Preservation Act (AHPA). Ground disturbing projects meeting the definition of a “federal undertaking” have gone through Section 106 consultation and compliance since that time. This process formally considers potential effects of the Forest’s activities on cultural resources, thereby eliminating or reducing the likelihood of cumulative effects.

Forest projects taking place before the 1970s were not required to conduct the type of cultural resource compliance mandated by NHPA, relying instead on less stringent and less applicable laws like the Antiquities Act of 1906, the Historic Sites Act of 1935, and the Reservoir Salvage Act of 1960. Therefore, projects and activities taking place on the Gila NF before the 1970s, and even before the Forest was

established in 1905, could have impacted cultural resources, including what are now considered historic resources (roads, mines, sawmills, forts, homesteads, etc., over 50 years of age).

Before the implementation of Section 106 of the NHPA, motorized routes were generally created without consideration of cultural resources. This resulted in motorized routes intersecting and overlapping with sites. In some cases, cultural features and artifacts are within the route prism and may have been damaged by vehicular contact or route maintenance. As stated above, these existing routes and their associated constructed features are exempt from further Section 106 compliance and consultation through the TM protocol (USDA Forest Service Southwestern Region; New Mexico State Historic Preservation Officer 2007). These direct, indirect and cumulative effects were considered during the development of the TM Protocol.

Activities like grazing, timber harvesting, mineral exploration, installing utilities etc. have been practiced on the Gila NF for many years. Before the NHPA, these types of activities had the potential to cause some cumulative effects to cultural sites, including but not limited to erosion and the disturbance of cultural deposits and/or structures. However, since the mid-1970s, these types of activities receive separate and individual consideration as part of Section 106 compliance.

Motorized cross-country travel and motorized dispersed camping have been authorized through the Gila NF Plan for decades. These actions have been allowed without specific Section 106 consultation and compliance. Therefore, effects from these actions on cultural resources have gone unchecked. However, through the passage of the TM rule, motorized cross-country travel is prohibited and motorized dispersed camping will either be eliminated or limited to specific corridors that will require Section 106 consultation and compliance.

The Risk Analysis completed for MDC and motorized areas during the DEIS supports this discussion. This analysis consisted of a hardcopy search of some 1,019 cultural sites within and outside MDC corridors and motorized areas (please see Appendix D for information on this study). Each site was evaluated based on its site condition at the time of recordation. This analysis includes about 19% of all known eligible and unevaluated sites relating to existing site condition. Information from that analysis has not been updated; however, it is still pertinent to this discussion. Several categories of the analysis have been quantified (Motorized Dispersed Camping Disturbances, Route-Site Intersections, and FS Authorized activities).

Table 18. Presents data from MDC corridor Risk Analysis from the DEIS (Appendix D). It displays the sampled number of sites per Alternative that have reported at least one impact from MDC, Route Intersections, and/or appear to have occurred as a result of Authorized FS disturbance.

Types of Disturbances	Alt. B (1019 sites)	Alt. C (716 sites)	Alt. D (417 sites)	Alt. E (0 sites)	Alt. F (592 sites)	Alt. G (482 sites)
Motorized Dispersed Camping Disturbance	104	82	54	N/A	65	61
Route-Site Intersections	268	217	140	N/A	184	160
FS Authorized	391	294	184	N/A	243	202

Known cultural sites with existing disturbances from motorized dispersed camping range from 104 sites in Alternative B to 54 sites in Alternative D; cultural sites that overlap or intersect with a route range from 268 sites in Alternative B to 140 sites in Alternative D; and sites with disturbances resulting from Forest-authorized activities range from 391 sites in Alternative B to 184 sites in Alternative D (Table 18). These disturbances may have occurred before Section 106 of the NHPA was fully implemented.

This information and the fact that Section 106 was not fully implemented until the mid-1970s indicates that past activities may have impacted some cultural resources across the Forest, confirming the potential for some cumulative effects from past activities.

Current, Foreseeable, and Future Projects

A list of current and foreseeable projects is provided in the Schedule of Proposed Actions (USDA Forest Service 2013b). These projects will go (or have gone) through Section 106 consultation and compliance using the R3 Heritage PA before the project is (or was) implemented. Effects to cultural resources will be addressed via the PA or Section 106 process, with the intent of avoiding or minimizing effects, resulting in determinations of No Effect or No Adverse Effect. Therefore, negative cumulative effects should be reduced or avoided for these projects.

Beneficial Cumulative Effects

As discussed earlier, motorized cross-country travel is prohibited under all Action Alternatives. This means that vehicular off-road travel will not be permitted, except in appropriate MDC corridors, motorized areas, for MBGR, or special use. Vehicles must stay in the confines of routes or corridors for driving; access outside of these routes will be reduced to foot traffic or other authorized access (equestrians, pack animals, special uses, for example).

Under the current condition, motorized cross-country travel is allowed across 2.44 million acres. Approximately 5,346 known sites are found within that space. Prohibiting motorized cross-country travel under any of the Action Alternatives would be highly beneficial to cultural resources and would reduce ease of access to sites located in areas that do not have designated routes. This would considerably reduce the potential for direct, indirect, and cumulative effects from motorized use. The potential risk of other indirect effects associated with recreational use of FS lands may be reduced because access would be limited to non-motorized traffic.

TM Alternatives C, D, E, F, and G, actions considered new undertakings under NHPA will go through Section 106 consultation and compliance, before they appear on the MVUM. These include: MDC corridors, motorized areas, and new route designations like adding unauthorized routes, reopening routes, and motorizing non-motorized routes. If potential effects to cultural resources are identified, they will be addressed and either eliminated through avoidance or minimized through protection measures or mitigation. Therefore, negative cumulative effects should be reduced or avoided for these actions.

In summary, when the effects of TM are added to effects of past, present, and reasonably foreseeable projects, there should not be an increase in cumulative effects. In fact, there should be a decrease in negative cumulative effects and an increase in beneficial cumulative effects to cultural resources across the Forest. Therefore, under the NHPA, any cumulative effects resulting from TM are not considered adverse.

Effects of Forest Plan Amendments

Amendments 1 thru 6 to the forest plan may have effects because they propose changes in the management of specific areas of the forest. These effects, like those from the proposed action and alternatives, are disclosed as part of the effects analysis above.

Amendment 7 is administrative in nature and not expected to have effects as a result of this project or future projects. This proposed amendment, for the most part, simply updates and provides consistent direction for application of the Forest Plan with the Travel Management Rule.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as power line rights-of-way or roads or the loss of soil productivity, wildlife habitat, and vegetation when roads are constructed. The loss will be irretrievable for the life of the road. A previous commitment of resources, including cultural resources, associated with the existing motorized travel system on the forest exists.

There is a very small risk of irreversible commitment of cultural resources in those alternatives where MBGR is proposed. This risk is relative to the amount of motorized big game retrieval proposed by the alternative. Alternative E would pose no risk; the risk increases slightly in alternatives D and G, slightly more in alternative F, and the most risk (similar to the existing condition) in alternative C. The risk is associated with effects that cross-country travel—for the purposes of MBGR—may have if vehicles should unknowingly drive over cultural sites.

There is a very small risk of irreversible commitment of cultural resources in alternatives where motorized dispersed camping corridors, motorized areas, and newly proposed route designations are proposed. This risk is relative to the number of miles or acres proposed by each Alternative. Alternative E would pose the least risk; Alternative D would provide a slightly more risk than Alternative E; Alternative G would have slightly more Alternative D; Alternative F would have a slightly more risk than Alternative G; and Alternative C would provide the most (similar to the existing condition). All of these actions require Section 106 consultation and compliance. Through this process, direct and indirect effects to cultural resources will be or have been assessed and potential adverse effects mitigated or avoided as appropriate. This will greatly reduce the likelihood of any irreversible commitments of cultural resources.

Effects of Climate Change

Effects of Cultural Resources on Climate Change

Cultural resources on the Gila NF include prehistoric and historic sites. Most prehistoric sites consist of habitation remains in the form of pit or masonry dwellings; roasting pits; lithic (stone) and pottery artifact scatters; some agricultural features like check dams; cultural landscapes; etc. The natural degradation of these sites is not known to emit CO2 or any other greenhouse gases.

Historic sites on the Gila NF consist of historic trash dumps; campsites; cabins; buildings; corrals; abandoned mines including features and associated artifacts; roads and trails; water wells; irrigation ditches; check dams; bridges; battle sites; remnants of frontier military forts and camps; Civilian Conservation Corps (CCC) associated camps and infrastructure; etc. Abandoned mines include gold and copper mines. These mines are treated and tested for mercury, arsenic, and lead. However, they are not known to emit CO2 or other greenhouse gasses. The natural degradation of the rest of these site types is not known to emit CO2 or other greenhouse gasses.

There are instances of unnatural degradation of cultural resources that can emit CO2 and other greenhouse gasses. In particular, sites with wooden features are sometimes dismantled for use in modern campfires. There are sites across the Gila NF that have been impacted from this kind of vandalism. In addition, wildfires can cause these features to burn. However, the number of sites with this kind of vandalism or wildfire damage is unknown and the measure of CO2 or other greenhouse gas emissions from these events is unknown.

Cultural resources on the GNF do not emit CO2 or other greenhouse gasses to any known degree that would affect climate change.

Effects of Climate Change on Cultural Resources

For the Southwest, climate change models predict increased temperatures, a decrease in overall moisture and a possible increase in destructive flooding into the 21st century (USDA-Forest Service2010b: 12-14). These changes may also bring about an increased risk of wildfires (USDA-Forest Service 2010b: 17-19). The predictive models have limitations, but are still considered credible when projecting possible climate scenarios (USDA-Forest Service 2010b).

Increases in temperature and decreases in moisture may not affect cultural resources directly. However, loss of vegetation during these events may cause wind and water-related soil erosion, which may affect prehistoric and historic cultural deposits to varying degrees. An increase in destructive flooding may also affect prehistoric and historic sites located near ephemeral or year-round streams and rivers. Rushing water can cause erosion, move artifacts, affect the integrity of cultural resources, and damage or destroy sites.

Increases in temperature and decreases in moister may also bring about an increase the risk of wildfires in the Southwest. Wildfire may damage or destroy sites that have features or artifacts that may melt or burn like wood, metal, glass, or plastic. Rock features can crack or spall dependent upon the type of rock and intensity of the fire. Wildfire suppression activities like creating dozer or hand lines may be destructive to cultural resources. These lines may be built in or near cultural resource sites causing damage to features and artifact scatters. These lines can also cause erosion if not properly rehabilitated. Burned trees within sites or near sites may fall causing cultural deposits to become disturbed. Because ground cover is compromised through wildfire, increased flooding and erosion may occur during monsoons. This may promote very similar effects as seen with destructive flooding above.

IV. Tribal Consultation, Land Uses, and Economic Impacts

Tribal Consultation

Introduction

Tribal consultation for the Forest Service is guided by a variety of laws, Executive Orders and Memoranda, as well as case law. Laws include the National Historic Preservation Act of 1966 and subsequent amendments (NHPA) (Public Law 89-665, 15 October 1966), Archaeological Resources Protection Act of 1979 (ARPA) (Public Law 96-95, 16 U.S.C. 470aa-mm, 31 October 1979), American Indian Religious Freedom Act of 1978 (AIRFA) (Public Law 95-341, U.S.C. 1996 and 1996a, 11 August 1978), National Environmental Policy Act of 1969 (NEPA) (Public Law 91-190, 42 U.S.C. 4321-4347, 1 January 1970), Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (Public Law 101-601, 16 November 1990), and National Forest Management Act of 1976 (NFMA) (Public Law 94-588, 22 October 1976, codified in 36 CFR 219). Executive Orders and Memoranda include a 1994 Memorandum on Government-to-Government Relations with Native American Tribal Governments (59 FR 85, 4 May 1994), E.O. 13007 on Accommodation of Sacred Sites (61 FR 104, 29 May 1996), and E.O. 12898 on Environmental Justice (59 FR 32, 16 February 1994).

Tribal consultation for the Travel Management (TM) project is also guided by Section III of the USFS Region 3 Heritage Programmatic Agreement (PA) with New Mexico SHPO, and Section V of Appendix I of the PA, the Standard consultation Protocol for Travel Management Route Designation. These documents ensure that Tribes are consulted as early as possible in the TM planning process, to identify and address places of traditional and cultural significance, and Tribal access to those places.

The Gila NF is committed to, and has conducted tribal consultation and NEPA scoping during the Travel Management process. These are carried out at the government-to-government level. This is a separate process from public scoping, due to the unique relationship between the U.S. Government and federally recognized Tribes. It ensures that interested Tribes are given the opportunity to participate in the planning process as required in NEPA and elsewhere. Prior to the Travel Management Rule (TMR) being enacted in 2005, specific projects involving road access, obliteration, and maintenance were addressed with Tribes on a case-by-case basis, as identified in the Gila NF's quarterly Schedule of Proposed Actions (SOPA) or other NEPA scoping.

The following eleven Tribes or chapters were consulted regarding travel management. The primary methods of consultation have included letters, phone calls, providing TM materials, and face-to-face meetings at tribal offices. Although all Tribes on this list were contacted, not all were available or expressed an interest in consulting at the time; the Ramah Navajo Chapter dropped out. However, the Gila NF will be consulting with the Ramah Navajo Chapter on the Travel Management FEIS.

Table 19. Summary of Gila NF tribal consultation for Travel Management Rule, in chronological order

Date	Type of consultation	Tribe	Tribal Contact
February 13, 2007	Letter request from Forest Supervisor for gov't-to-gov't consultation on TM, and brief summary of TMR.	Pueblo of Acoma Alamo Navajo Chapter Fort Sill Apache Tribe The Hopi Tribe Pueblo of Laguna Mescalero Apache The Navajo Nation Ramah Navajo Chapter San Carlos Apache Ysleta Del Sur Pueblo Pueblo of Zuni	Governor Jason Johnson President Buddy Mexicano Office of the President Chairman Ivan Sidney, Sr. Governor John Antonio, Sr. THPO Holly Houghten President Joe Shirley, Jr. President Leo L. Pino Chairwoman Kathy Kitcheyan Governor Arturo Sinclair Governor Norman Cooeyate
July 18, 2008	Letter from Forest Supervisor asking to meet & discuss Gila activities (including TM)	Same as above	Same as above
September 8, 2008	Face-to-face meeting between Tribal contact and Forest Supervisor at tribal offices; overview of TMR; sharing info and materials.	Pueblo of Zuni, Zuni, New Mexico	Governor Norman Cooeyate and Tribal Council
September 12, 2008	"	Fort Sill Apache Tribe, met at Akela, NM	Chairman Jeffrey Houser and Tribal Council
September 24, 2008	"	Pueblo of Acoma, NM	Ron Charlie, 2nd Lieutenant Governor
October 2, 2008	"	The Hopi Tribe, Kykotsmovi, AZ	Arnold Taylor, Natural Resource Manager
October 24, 2008	"	Alamo Navajo Chapter, Magdalena, NM	President Buddy Mexicano
November 17, 2008	"	San Carlos Apache, San Carlos, AZ	Terry Rambler and Natural Resource Committee
September 9, 2009	Gov't-to-Gov't cover letter and TM Proposed Action	Pueblo of Acoma Alamo Navajo Chapter Fort Sill Apache Tribe The Hopi Tribe Pueblo of Laguna Mescalero Apache The Navajo Nation San Carlos Apache Ysleta Del Sur Pueblo Pueblo of Zuni	Governor Chandler Sanchez President Buddy Mexicano Chairman Jeffrey Houser Chairman Ben Nuvamsa Governor John Antonio, Sr. Dr. Carlton Naiche-Palmer, President President Joe Shirley, Jr. Chairman Wendsler Nosie, Sr. Governor Frank Paiz Governor Norman Cooeyate
June 29, 2010	Face-to- Face-to-face meeting between Tribal contact and Forest Supervisor at tribal offices; Topic TMR DEIS	The Hopi Tribe	Chairman Leroy Ned Shingoitewa
July 1, 2010	"	Alamo Navajo Chapter	Vice President Annabelle Pino
July 2, 2010	"	The Hopi Tribe	Chairman Leroy Shingoitewa Terry Morgart, Cultural Preservation Officer
July 7, 2010	"	Pueblo of Zuni	Governor Norman Cooeyate
July 29, 2010	"	Ysleta Del Sur Pueblo	Governor Frank Paiz Lieutenant Governor Carlos Hisa
August 2, 2010	"	Pueblo of Laguna	Governor John Antonio, Jr.

Date	Type of consultation	Tribe	Tribal Contact
September 28, 2010	"	Pueblo of Acoma	Lieutenant Governor Ron Charlie Ernest Vallos, Tribal Council Member Realty Director Petuuch Gilbert
June 2, -November 12, 2010	Phone calls to set-up Face-to-face meeting on TMR DEIS; No meeting Scheduled	Mescalero Apache San Carlos Apache Tribe	President Mark Chino Chairman Wendsler Nosie, Sr.
December 27, 2010	Gov't-to-Gov't cover letter and DEIS	Pueblo of Acoma Alamo Navajo Chapter Fort Sill Apache Tribe The Hopi Tribe Pueblo of Laguna Mescalero Apache The Navajo Nation San Carlos Apache Ysleta Del Sur Pueblo Pueblo of Zuni	Governor Chandler Sanchez President Scott Apachito Chairman Jeffrey Houser Chairman Leroy Ned Shingoitewa Governor John Antonio, Sr. President Mark Chino President Joe Shirley, Jr. Chairman Wendsler Nosie, Sr. Governor Frank Paiz Governor Norman Cooeyate
August 29, 2011	Gov't-to-Gov't cover letter and DEIS Comments	Pueblo of Acoma Alamo Navajo Chapter Fort Sill Apache Tribe The Hopi Tribe Pueblo of Laguna Mescalero Apache The Navajo Nation San Carlos Apache Ysleta Del Sur Pueblo Pueblo of Zuni	Governor Randall Vicente President Scott Apachito Chairman Jeffrey Houser Chairman Leroy Ned Shingoitewa Governor Richard B. Laurkie President Mark Chino President Ben Shelly Chairman Terry Rambler Governor Frank Paiz President Arlen Quetawki
November 10, 2011	Face-to-face meeting between Tribal contact and Forest Supervisor at tribal offices; Topic TMR DEIS	Fort Sill Apache Tribe	Chairman Jeffrey Houser Vice-Chairman Lori Gooday Ware, and Tribal Historian Leland Michael Darrow

Tribal Issues, Comments and Concerns

Of the eleven Tribes contacted since 2007, the Gila NF received 3 formal comment letters in response to NEPA scoping from two tribes. A small number of tribal concerns about TMR were also brought forward during six face-to-face discussions in 2008, five in 2010, and one in 2011. In these discussions, Tribes were provided with TMR information and reassured that tribal access to traditional use areas would be accommodated. Tribes were asked to contact either the Gila NF Travel Management Coordinator or District Rangers if they had further concerns or comments. Several Tribes indicated they intended to share Gila TMR information with tribal elders or other tribal officials.

Tribal Consultation Summary

Of the eleven federally recognized Tribes contacted for consultation on Travel Management, three either expressed no concerns about TM, or that the TM project/decision would have no impact or no significant impact upon TCPs. No responses were received from two Tribes.

Four expressed general concerns about the need for continued access by Tribal members for traditional plant gathering and other activities on the Gila NF. Three expressed concern about motorized vehicle and ATV damage to cultural and natural resources.

Two tribes favored more restrictions on motorized use on the Gila NF. One of these favored the most restrictive motorized use Alternative feeling it would provide protection to cultural heritage values. One did not favor MBGR saying ATV use should be limited.

Based on this information, no Traditional Cultural Properties or sacred sites were identified within the Travel Management Project area, nor were any identified as being affected by the project. Gila NF is engaged in ongoing Tribal consultation, and will consider additional information received under relevant law, regulation, and policy.

If identified, TCPs or sacred sites in the project area will be treated as significant historic properties under the provisions of the USFS Region 3 Programmatic Agreement and National Historic Preservation Act, similar to other cultural resources.

Where identified, effects to TCPs or sacred sites from motorized access, appropriate mitigations will be applied, such as:

1. Where motorized access to traditional cultural properties is reduced because of designation, special use or other authorizations will be granted to users. Consultation with appropriate or traditional communities or practitioners may develop other mitigation measures
2. Where traditional cultural properties have the potential to be physically impacted by routes, fixed-distance corridors, or areas, mitigation will consist of not designating or using other kinds of mitigation to reduce adverse effects. In some cases, consultation with appropriate or traditional communities or practitioners may develop other mitigation measures resulting in traditional cultural or historical properties being avoided or not adversely affected by designation.

Contemporary Tribal Land Uses

Certain Tribes have cultural and geographical ties and knowledge about the lands now managed by the Gila NF. These include the Pueblo of Acoma, Alamo Navajo Chapter, Fort Sill Apache Tribe, The Hopi Tribe, Pueblo of Laguna, Mescalero Apache, The Navajo Nation, Ramah Navajo Chapter, San Carlos Apache, Ysleta Del Sur Pueblo, and Pueblo of Zuni.

The Gila NF does not manage any Tribal lands, and is not located adjacent to any Tribal lands (trust, reserved, or allotted). In addition, there are no Tribal treaty rights on the Gila NF. Instead, Tribal members sometimes visit the Gila NF to gather traditional resources, engage in traditional activities, hold ceremonies, and visit special locations. For these reasons, Tribes share an interest in the management and protection of natural and cultural resources, including effects from motorized vehicle use.

Traditionally, Tribes with an interest in the Gila NF are:

1. Those descended from, or having cultural affiliation with prehistoric indigenous occupants of Gila NF lands (USDA–Forest Service Southwestern Region 1996: 119-121);
2. Those who historically occupied lands now comprising the Gila NF (prior to establishment of the Gila NF in 1905); or
3. Both of the above.

Tribes have expressed these ancestral connections to land now administered as the Gila NF. Certain Tribes identified the presence of unspecified locations on the Gila NF for origin stories, ceremonies, rituals, important hunting areas, clan origins, prehistoric affiliations, oral history, and shrines, representing current or past Tribal traditions and land uses.

Concerns expressed by Tribes in government-to-government TM consultation include the need for access to unspecified or very general areas on the Gila NF for plant gathering and other traditional activities. Concern was also expressed about ATVs damaging the forest and impacting sites. No specific areas were identified (newly proposed ATV trails are analyzed within the Effects from Motorized Routes within Effect on Cultural Resources section of this report). No sacred sites or Traditional Cultural Properties (TCPs) have been identified as being affected by the Travel Management Project, and no Tribal concerns have been expressed about specific routes, motorized areas, MBGR or MDC corridors. Although general areas were identified for traditional use, these were not specific enough to assist in developing TM Alternatives.

Because the Gila NF is large, rural, and isolated, Tribal members use its lands on an intermittent or occasional basis. Some Tribes affiliated with the Gila NF's land base are now located a great distance from the Gila NF due to historic and prehistoric migrations and events. Current information on Tribal land use suggests that it is widely dispersed and relatively low in frequency across a large area. This is supported by the few, non-specific Tribal comments and concerns provided to the Gila NF for the Travel Management Project and other projects. However, this does not mean that Tribal activities do not occur on the Gila NF or that such activities are not culturally important. Similarly, it does not mean that any potential sacred site or TCP located on Gila NF lands are less important. Cultural ties to the Gila NF continue to be important to Tribes.

Effects Analysis

Motorized cross-country travel is prohibited in all Action Alternatives. While non-motorized travel including hiking, horseback riding, and use of pack animals may continue to be used by Tribes to access important areas for traditional activities, it is not known if Tribes typically access these areas in these non-motorized ways. Overall, the prohibition of motorized cross-country travel and reduction of other motorized access may have an effect on Tribal land use on the Gila National Forest.

Travel Management effects analysis for Tribal land uses centers upon the ability of Tribes to continue their traditional activities within the Gila NF and the potential risk of any effects to potential sacred sites or TCPs. The ability of Tribes to continue their traditional activities may be negatively affected with the prohibition of motorized cross-country travel and, as proposed miles/acres of routes, MDC, MBGR, and motorized areas are reduced per Alternative. However, potential sacred sites or TCPs may be positively affected by these reductions.

While no potential sacred sites or TCPs were identified as being affected by the travel management project through consultation, there is a chance that not all sacred sites or TCPs are known to the Gila NF. Travel Management could have potential direct and indirect effects to these properties. These may include, but are not limited to, routes bisecting the property and the introduction of noise to traditional gathering areas or during other traditional activities. The reduction of miles and acres through closure of routes and prohibition of motorized cross-country travel may decrease motorized access to specific areas on the forest for tribal activities including ceremonies and traditional gathering areas. The effects associated with the inability to perform ceremonies or gather traditional materials are unknown but could be quite substantial. However, Tribes would still be able to continue these important traditional activities on the Gila NF. The Forest would accommodate access for such activities under EO 13007, the American Indian Religious Freedom Act (AIRFA) and Forest Service policies (such as FSH 2409.18 on granting permits free of charge to federally recognized Tribes to gather forest products for traditional and cultural uses www.fs.fed.us/cgi-bin/Directives/get_dirs/fsh?2409.18) and special use authorizations.

Beneficial effects from the closure of routes and the prohibition of motorized cross-country travel to potential sacred sites and TCPs may include, but are not limited to, a reduction in noise, route-property

intersections, and interruption of traditional activities. These beneficial effects will increase as the number of acres proposed for MDC corridors, MBGR, motorized areas, and miles of routes decrease.

Alternative B provides the maximum potential of motorized access to forest service lands through motorized cross-country travel. This action allows motorized use on 2.44 million. All other Alternatives prohibit motorized cross-country travel (except as defined in appropriate MDC corridors, motorized areas, MBGR, or under a special use authorization) limiting potential direct and indirect effects to potential sacred sites or TCPs. Therefore, Alternative B would allow the most access to Tribes for traditional activities and, therefore, the least relative risk of effects for these activities. However, Alternative B would also have the highest relative risk of direct and indirect effects to any potential sacred sites or TCPs.

Changes presented in Alternative C result in the most mileage for routes, the greatest acreage for MDC corridors, the greatest distance for MBGR, and motorized areas of all Action Alternatives. Because of the prohibition of motorized cross-country travel, Alternative C would provide less access to Tribes for traditional activities than Alternative B, but more access than all other Action Alternatives. Therefore, Alternative C would provide the second lowest relative risk of effects to traditional activities. Outside of Alternative B, Alternative C provides the highest relative risk of direct and indirect effects to potential sacred sites and TCPs.

Changes presented in Alternative D result in the second least potential risk for direct and indirect effects to potential sacred sites and TCPs. Alternative D proposes fewer route miles/acres, less acreage for MDC and MBGR than seen in Alternative B or proposed in C, F, and G. Alternative D does not propose any motorized areas, unlike Alternatives C, F, and G. This means Alternative D provides a lower relative risk of direct or indirect effects to potential sacred sites or TCPs when compared to Alternatives B, C, F, and G. This also means that Alternative D provides the second lowest motorized access to Tribes for traditional activities. Therefore, there is a higher relative risk of potential effects to traditional activities when compared to Alternatives B, C, F, and G.

Changes presented in Alternative E result in the least potential for direct and indirect effects to potential sacred sites or TCPs of all alternatives. Alternative E proposes the lowest number of miles/acres for routes, no MDC corridors, no MBGR, and no motorized areas. Alternative E provides the lowest relative risk to potential sacred sites or TCPs when compared to all other Alternatives. Alternative E provides the lowest number of miles/acres of Gila NF lands for motorized access to Tribes for traditional activities. Therefore, this alternative provides the highest relative risk of potential effects to traditional activities when compared to all other alternatives.

Alternative F proposes less mileage/acreage for routes than seen in Alternative B or proposed in Alternative C; comparable to Alternative G; and more than Alternatives D and E. Alternative F proposes less MDC acreage than seen in Alternative B or proposed in Alternative C and more than Alternatives D, E, and G. Alternative F proposes less MBGR acreage than seen in Alternative B or proposed in Alternative C, and more than Alternatives D, E, and G. Alternative F proposes the same acreage of motorized areas as do Alternatives C and G. Changes presented in Alternative F result in less relative risk of direct and indirect effects to potential sacred sites or TCPs when compared to Alternatives B and C, but a higher relative for risk when compared to Alternatives D, E, and G. Changes presented in Alternative F result in a higher potential risk of effects to Tribal traditional activities when compared to Alternatives B and C, but a lower relative risk when compared to Alternatives D, E, and G.

Alternative G proposes less mileage/acreage for routes than seen in Alternative B or proposed in Alternative C; comparable to Alternative F; and more than Alternatives D and E. Alternative G proposes less MDC acreage than seen in Alternative B or proposed in Alternatives C and F ; comparable to Alternative D; and more than Alternative E. Alternative G proposes less MBGR acreage than seen in

Alternative B or proposed in Alternatives C or F; comparable to D; and more than Alternative E. Alternative G proposes the same acreage of motorized areas as do Alternatives C and F. Changes presented in Alternative G result in less relative risk for direct and indirect effects to potential sacred sites and TCPs when compared to Alternatives B, C, and F, but poses a higher relative risk when compared to Alternatives D and E. Changes presented in Alternative G result in a higher potential risk of effects to Tribal traditional activities when compared to Alternatives B, C, and F, but a lower relative risk when compared to Alternatives D and E.

Tribes will have access to Gila NF lands for traditional activities like ceremonies and gathering areas under applicable laws, regulations, and Forest Service policies.

Cumulative Effects

As described in the Cumulative Effects section of the Effects on Cultural Resources, there have been many past projects on the forest. Some of these projects were performed prior to the full implementation of the NHPA in the mid-1970s. Therefore, there is some potential for cumulative effects to both potential sacred sites or TCPs and Tribal traditional activities.

A list of current and foreseeable projects is provided in the Schedule of Proposed Actions (USDA Forest Service 2013b). These projects will go (or have gone) through Section 106 tribal consultation using the R3 Heritage PA before the project is (or was) implemented. Through this, Tribes have been given the opportunity to provide comments and concerns on projects that could affect potential sacred sites or TCPs and traditional activities. When Tribes provide such concerns, these effects have been or will be addressed via the PA or Section 106 process, with the intent of avoiding or minimizing effects to historic properties (including TCPs). Sacred sites and ceremonial uses are also protected under AIRFA, EO 13007, and other laws, legislation, and policy. Therefore, negative cumulative effects should be reduced or avoided for these projects.

Concerns expressed by Tribes in government-to-government TM consultation include the need for access to unspecified and very general areas on the Gila NF for plant gathering and other traditional activities. However, specific areas, routes, or corridors were not identified. Tribes will have access to Gila NF lands for traditional activities like ceremonies and gathering areas as noted above.

No sacred sites or Traditional Cultural Properties (TCPs) have been identified as being affected by the travel management project. There is a chance that the Gila NF has not been provided with this information. Therefore, there would be a slight risk for effects to potential sacred sites and TCPs.

In summary, when the effects of TM are added to effects of past, present, and reasonably foreseeable projects, there should not be an increase in cumulative effects. In fact, there should be a decrease in negative cumulative effects to potential sacred sites or TCPs and traditional activities across the Forest. Therefore, any cumulative effects are not considered adverse.

Economic Impacts to Tribes

The eleven federally-recognized Tribes identified above in Tribal Consultation and Contemporary Tribal Land Use sections may also have economic interests in the Gila NF. As previously stated, these Tribes do not have treaty rights on the Gila NF, and the Gila NF is not located adjacent to any Tribal lands (trust, reserved, or allotted).

American Indian populations in the four counties where the Gila NF is located range from a low of 0.5% (Hidalgo) to a high of 4.6% (Catron), compared to 9.3% for the entire State of New Mexico (US Census Bureau: 2012).

Because the Gila NF is a greater distance from many Tribal lands and reservations, longer drive times are required to access the Gila NF. This creates inherently greater economic costs for Tribal members travelling to the Gila NF (gas, vehicle, motel, food, etc.). This situation would remain essentially unchanged under all alternatives, including existing condition.

Data on local Tribal businesses are unavailable; such businesses are not known to contribute to aspects of the local economy supported by the Forest. Rather, most Tribal members or groups participate in occasional activities on the Gila NF for personal, traditional, community, group or religious reasons and uses. (These have been analyzed as traditional activities under the Contemporary Tribal Land Use section). Locations of such activities may fluctuate, and have not been specifically identified by Tribes. Gathering forest products, such as pinion nuts or Emory oak, has not been identified as occurring for commercial resale, and sale of Forest products is not known to supplement Tribal household income.

This information supports a conclusion (and observation based on tribal consultation) that visitation to the Gila NF by Tribal members is generally less frequent than to places closer to existing tribal lands, and would continue to be so. This visitation appears to be more socially and culturally driven, than economically driven. As such, it is important to maintaining the cultural and social fabric of Tribes.

Because very few Tribal members live and work in the vicinity of the Gila NF compared to other parts of New Mexico and Arizona, changes to Tribal economic activities as a result of travel management designation should be minor to none. Tribes would continue to have opportunities to gather culturally important materials on the Gila NF under applicable Forest Service policies (such as FSH 2409.18 on granting permits free of charge to federally recognized Tribes to gather forest products for traditional and cultural uses www.fs.fed.us/cgi-bin/Directives/get_dirs/fsh?2409.18).

Effects Analysis

Motorized access to the Gila NF lands is the most important aspect to Tribal economic activities. Therefore, Alternatives that propose more miles or acres of motorized access provide a better opportunity for such activities. There would be no change in motorized access to the Gila NF under Alternative B. There is potential for minor effects to Tribal economic activities under Alternatives C through G due to the prohibition of motorized cross-country travel and reduction in route mileage which reduces motorized access to some locations on Forest. Alternative E is the most restrictive in terms of motorized access, and could have the greatest effects on Tribal economics activities. During Tribal consultation, no concern was brought forth about economic effects. Therefore, economic impacts are considered to be minor.

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Appendix A: Laws, Regulations, and Policies for Cultural Resources

American Indian Religious Freedom Act of 1978 (AIRFA): Was created to protect and preserve the traditional religious rights and cultural practices of American Indians. Calls upon governmental agencies to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise traditional religions. Refers to Indians' access to sacred sites, the use of natural resources normally protected by conservation laws, and participation in traditional Indian ceremonies.

Antiquities Act of 1906: Resulted primarily from concerns about protecting prehistoric Indian ruins and artifacts, termed antiquities, on federal lands in the West. It authorized permits for legitimate archeological investigations and penalties for persons taking or destroying antiquities without permission.

Archeological and Historic Preservation Act of 1974 (AHPA): This act amends and expands the Reservoir Salvage Act of 1960. The AHPA clarifies that all federal agencies are authorized to fund archeological investigations in order to comply with Section 106 of the NHPA.

Archaeological Resources Protection Act of 1979 (ARPA): Expands the protections provided by the Antiquities Act of 1906 in protecting archaeological resources and sites located on public lands. Regulates finds on federal lands to prevent looting and destruction of archeological resources.

Executive Order 11593: Protection and Enhancement of the Cultural Environment: This EO calls for Federal agencies to inventory cultural resources under their jurisdiction and to initiate measures to preserve, restore, and maintain federally owned historic or archeological sites that are considered significant. Most of the provisions within this EO have been incorporated within amendments to the NHPA.

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations: This E.O. emphasizes the importance of NEPA's public participation process, directing that each Federal agency shall provide opportunities for community input in the NEPA process. This has particular relevance to Tribes. Agencies are further directed to identify potential effects and mitigation measures in consultation with affected communities. Under this E.O. Agencies must identify and address, as appropriate, disproportionately high and adverse human health, environmental, economic and social effects of federal projects on minority and low-income populations.

Executive Order 13007: Indian Sacred Sites: This E.O. requires Federal land managing agencies like the Forest Service to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites.

Forest Service Handbook (FSH) Interim Directive 2409.18-2012-2: This interim directive provides direction for granting trees, portions of trees, or forest products to federally recognized Indian Tribes free of charge for non-commercial traditional or cultural purposes.

Forest Service Manual (FSM) 2360 - Recreation, Wilderness, and Related Resource Management: Contains Forest Service policies on managing cultural resources.

FSM 2361.3: requires that Forest Service projects with potential to affect cultural resources comply with 36 CFR 800, the implementing regulations for Protection of Historic Properties under Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended.

Historic Sites Act of 1935: Declares a national policy of preserving for public use historic sites, buildings and objects of national significance. This act gives the Secretary of the Interior the power to secure important data on historic and archeological sites, to survey historic and archeological sites, and to collect accurate information about historic or archeological sites.

National Forest Management Act of 1976 (NFMA): This Act provides guidelines on how the Forest Service should be managed in regard to multiple-use, sustained-yield concepts, etc. The codification of this act is found in 36 CFR 219. Specific to Tribal Consultation, the Forest Service is directed to involve American Indian and Alaska Native tribal governments in planning process through a government- to-government relationship in 36 CFR 219.15.

National Historic Preservation Act of 1966 (NHPA): The National Historic Preservation Act is the primary federal law governing preservation of cultural and historic resources in the United States. The law establishes a national preservation program and a system of processes which encourage identification and protection of cultural and historic resources of national, state, tribal and local significance.

Section 106 of NHPA: Requires Federal agencies to take into account the effects of their actions on historic properties, using processes outlined in Federal Regulations (36 CFR 800). Grants legal status to historic preservation in Federal planning, decision making, and project execution.

Section 110 of NHPA: Requires Federal agencies to establish a preservation program to protect and preserve historic properties in consultation with others.

Native American Graves Protection and Repatriation Act of 1990 (NAGPRA): Establishes the ownership of cultural items excavated or discovered on federal land. NAGPRA requires federal agencies to return Native American cultural items and human remains to their respective peoples. Cultural items include funerary objects, sacred objects, and objects of cultural patrimony.

Presidential Memorandum on Government-to-Government Relations with Native American Tribal Governments, Memorandum for the Heads of Executive Departments and Agencies (1994): This document outlines principles that federal agencies are to follow in their interactions with Native American tribal governments. It clarifies the responsibility to ensure that the Federal Government operates within a government-to-government relationship with federally recognized Native American tribes.

Region 3 First Amended Programmatic Agreement (PA) Regarding Historic Property Protection and Responsibilities with the New Mexico State Historic Preservation Officer (SHPO) and SHPOs of 3 other states (dated 12/24/2003). Under this agreement, the Forest Service (FS), SHPO, and Advisory Council on Historic Preservation agree that the FS shall consider cultural resources and administer activities subject to Section 106 of NHPA in accordance with the stipulations in this agreement. This PA allows development of Standard Consultation Protocols for classes of undertakings with standard, repetitive effects and treatment measures for cultural resources. Such a protocol was developed for Travel Management Route Designation.

Appendix I Standard Consultation Protocol for Travel Management Route Designation (9/27/2007): Determines that authorizing motorized use under the Travel Management Rule has potential to affect Historic Properties, and is therefore considered an "undertaking" (activity) requiring compliance with NHPA. This document provides procedures for all aspects of Section 106 compliance and SHPO consultation related to the effects of Travel Management designation on cultural resources, including:

- Activities exempt from further Section 106 review or consultation
- Situations requiring review and consultation

- Public Involvement
- Tribal Consultation
- Planning
- Inventory Requirements (i.e. cultural resource survey)
- Phasing (i.e. deferring inventory until after NEPA decision under certain circumstances)
- Protection Measures
- Resolving Adverse Effects
- Reports
- Monitoring

The Protocol and PA were officially reviewed by interested parties including federally recognized Tribes. These two documents were concurred with and signed by the Region 3 Regional Forester, SHPOs of 4 states including New Mexico, and the Executive Director of the Advisory Council on Historic Preservation. As such, Forests may legally implement these provisions instead of performing standard compliance and consultation as codified in 36 CFR 800.

Reservoir Act of 1960: Provided for the preservation, recovery, and protection of historic or archeological data that could be lost during dam and reservoir projects. This act has been amended several times and is now known as the Archeological and Historic Preservation Act.

Gila NF Land and Resource Management Plan: The following management direction in the Forest Plan applies to the Travel Management designation process.

- Cultural Resources 1: *"Inventory and prevent loss or damage of cultural resources until they can be evaluated for scientific study, interpretive services, or other appropriate uses."* (USDA Gila National Forest 1986: Cultural Resources, page 12) This direction refers primarily to non-project activities (i.e. non-undertakings) under Sec 110 of NHPA, which does not apply to Sec 106 compliance for travel management.
- Cultural Resources A02: *"The Forest will comply with the National Historic Preservation Act (NHPA) and with Executive Order 11593, and will undertake active management which recognizes cultural resources as equal in importance to other multiple uses."* (USDA Gila National Forest 1986: Cultural Resources A02, page 22). The Forest complies with this direction for travel management. Note: Most of E.O. 11593 provisions have been incorporated with the NHPA. (personal communication David M. Johnson, R3 Regional Archeologist, Albuquerque).

Appendix B: Glossary of Cultural Resource Terms

Advisory Council on Historic Preservation (ACHP): Established by Title II of NHPA, this Advisory Council is an independent executive agency that reports to and advises the President and Congress on historic preservation matters. Headquartered in Washington, D.C.

Area of Potential Effects (APE): 36 CFR 800.16 defines this as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist."

Artifact: Portable object made, modified or used by humans. Normally refers to portable prehistoric items such as implements of stone, bone, pottery, or other durable material.

Bioturbation: The stirring or mixing of sediment or soil by organisms, especially by burrowing or boring.

Chapter: A local governing body within the Navajo Nation that has authority over local matters.

Complete or 100% Inventory: A comprehensive, systematic, intensive examination of an area designed to gather information about the number, location, condition, and distribution of historic properties within an undertaking's APE.

Cultural Affiliation**:** A relationship of shared group identity which can reasonably be traced historically or prehistorically between a present day Indian tribe and an identifiable earlier group.

Cultural Deposit: Surface or subsurface soil deposits that contain cultural materials.

Cultural Resource Specialist or Heritage Specialist**:** A Forest Service staff or advisory position with education and expertise in archaeology, history, cultural resource management, or related disciplines. They provide professional recommendations and services to help land managers meet their Heritage Program responsibilities.

Cultural resource site (Also referred to as 'Cultural Site' or 'Site': A locus of purposeful human activity which has resulted in a deposit of cultural material beyond one or a few accidentally lost artifacts. Any location that includes prehistoric and/or historic evidence of human use or that has important socio-cultural value.

Cultural or Heritage Resources**:** Resources that are related to the tangible, material life ways of a cultural group or groups as specified in the Code of Federal Regulations, 36 CFR 296.3. These may be sites, areas, buildings, structures, districts, and objects which possess scientific, historic, cultural and/or social values. They may include objects or definite locations of human activity, occupation, or use identifiable through field survey, historical documentation, or oral evidence. Cultural resources are prehistoric, historic, archaeological, or architectural sites, structures, places, or objects and traditional cultural properties. Cultural resources include the entire spectrum of resources for which the Heritage Program is responsible, from artifacts to cultural landscapes without regard to eligibility for listing on the National Register of Historic Places.

Exemptions: Those undertakings, which because of their nature and scope, have predictable effects and a very low likelihood of affecting historic properties. These classes of undertakings shall be exempt from further Section 106 review and consultation under this Agreement (Appendix A, Section II).

Feature: Non-portable objects made, modified, or manipulated by humans. Features can include: hearths; architecture; trash middens; soil stains; etc.

Heritage Program. The comprehensive Forest Service program of responsibilities related to historic preservation. The purpose of the Heritage Program is to manage prehistoric and historic cultural resources for the benefit of the public through preservation, public use, and research.

***Historic*:** Point in time after European contact and the introduction of written records.

***Historic Properties*:** 36 CFR 800.16 defines historic properties as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe … and that meet the National Register criteria."

***Indian Tribe*:** NHPA defines Indian tribe as "an Indian tribe, band, nation, or other organized group or community, including a native village, regional corporation or village corporation, as those terms are defined in section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. 1602), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians."

Infra: Abbreviation for Infrastructure, the Forest Service Integrated Data Management System.

Inventory: The record of cultural resources known to occur within a defined geographic area. An inventory includes a compilation and synthesis of existing information and field surveys for evidence of past human activity. In areas where the ground surface is difficult to see, field survey may include subsurface probing to determine the presence or absence of cultural material.

National Historic Preservation Act (NHPA). A Federal Act, passed in 1966, which established a program for the preservation of additional historic properties throughout the nation and for other purposes, including the establishment of the National Register of Historic Places, the National Historic Landmarks designation, regulations for supervision of antiquities, designation of the State Historic Preservation Offices (SHPO), guidelines for federal agency responsibilities, technical advice, and the establishment of the Advisory Council on Historic Preservation.

National Register of Historic Places (NRHP). A register of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, and culture. The register was established by the National Historic Preservation Act of 1966 and is maintained by the Secretary of the Interior.

Prehistoric. Point in time before European contact and prior to written records being kept.

Programmatic Agreement. Standardized agreement between Forest Service (FS), State Historic Preservation Officer (SHPO), and Advisory Council on Historic Preservation (Council)that spells out the responsibility of each entity in regards to cultural resource management on FS lands.

Protocols (a.k.a. Standard Consultation Protocols): New consultation protocols, which may be developed in consultation with the SHPOs, for specific classes of FS undertakings that will streamline consultation procedures outlined in this Agreement or under 36 CFR 800

Sample Survey: Survey designed to estimate characteristics, density and/or distribution of the population of sites or historic properties in an area based on a sample. Only professional archaeologists, or consultants meeting professional standards, pursuant to 36 CFR 296.8, may design a sample survey or less than 100% (complete) survey.

***Section 106 of NHPA*:** A section of the National Historic Preservation Act requiring federal agencies to consider the effects of their actions on historic properties, as implemented in the so-called Section 106 process outlined in 36 CFR 800.

State Historic Preservation Officer (SHPO): A person appointed by a state's Governor to administer the State Historic Preservation Program.

***Traditional Cultural Property (TCP)*:** A cultural resource that is eligible for inclusion in the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. The entity evaluated for eligibility for inclusion in the National Register of Historic Places must be a tangible property; that is, a district, site, building, structure, or object as defined in 36 CFR 64.4.

Tribal Historic Preservation Officer (THPO). A person appointed by a Tribal leader(s) to administer the Tribal Historic Preservation Program on Tribal Lands.

Tribe. Term used to designate a federally-recognized group of American Indians and their governing body. Tribes may be comprised of more than one Band.

***Undertaking*.** National Historic Preservation Act, Section 301(7) defines undertaking as "a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license or approval; and those subject to State or local regulation administered pursuant to a delegation or approval by a Federal Agency."

Appendix C: Acronyms Used in this Report

ACHP: Advisory Council on Historic Preservation

AHPA: Archeological and Historic Preservation Act

APE: Area of Potential Effects

ARMS: Archaeological Records Management Section (State of New Mexico)

ARPA: Archaeological Resources Protection Act of 1979

ATV: All-Terrain Vehicle

CFR: Code of Federal Regulations

DEIS: Draft Environmental Impact Statement

FEIS: Final Environmental Impact Statement

FS: Forest Service

FSH: Forest Service Handbook

FSM: Forest Service Manual

GMU: Game Management Unit

GIS: Geographic Information Systems

IO: Isolated Occurrence

MBGR: Motorized Big Game Retrieval

MDC: Motorized Dispersed Camping

MVUM: Motor Vehicle Use Map

NEPA: National Environmental Policy Act of 1969

NAGPRA: Native American Graves Protection and Repatriation Act of 1990

NFMA: National Forest Management Act of 1976

NHPA: National Historic Preservation Act of 1966, as amended

NF: National Forest

NFS: National Forest System (as in roads)

NRHP: National Register of Historic Places

OHV: Off-Highway Vehicle

PA: Programmatic Agreement

R3: Region 3 of the Forest Service (Southwestern Region including New Mexico and Arizona)

RD: Ranger District

SOPA: Schedule of Proposed Actions

SHPO: State Historic Preservation Officer

THPO: Tribal Historic Preservation Officer

TMR: Travel Management Rule

TM: Travel Management

TCP: Traditional Cultural Property

USC: United States Code

USDA: United States Department of Agriculture

WSA: Wilderness Study Area

Appendix D: Gila National Forest Risk Analysis and Effects to Cultural Resources

As Used in the DEIS

Risk Analysis

Note: The Risk Analysis section is taken from the Cultural Resource Specialist Report for the Gila National Forest Travel Management Rule Implementation, DEIS (USDA Forest Service 2010c: 9-11). Added language is italicized.

A process was developed to assess existing disturbances to cultural resource sites located within TM project areas and motorized dispersed camping corridors. The objective of this process is to identify direct, indirect, and potential cumulative effects to cultural resources related to several categories of disturbance.

Specialists used the risk analysis to: 1) evaluate the condition of cultural sites visited for the travel management project; and 2) evaluate condition identified in hard copy records for previously recorded cultural sites located in MDC corridors, motorized areas, and throughout the Gila NF. Site condition was assessed for all known sites considered eligible or undetermined to the National Register within motorized areas, most known sites in proposed motorized dispersed camping corridors and a random sample of known sites Forest-wide.

Federal undertakings authorized by the Gila NF's Land Management Plan and other authorized Forest projects are carried out in compliance with NEPA and the National Historic Preservation Act. Therefore, effects to cultural resources resulting from these projects are (or have been) addressed under these laws, regulations, and policies. There may be some effects to cultural resources that occurred prior to passage of the National Historic Preservation Act of 1966, or prior to its implementation in the Forest Service in the 1970s. Effects to some cultural resource sites Forest-wide have not yet been documented due to (1) sites are not located in project areas requiring cultural resource survey under NHPA; and (2) sites fall into the 88% of the Forest that is still unsurveyed for cultural resources.

To assess site condition for the Risk Analysis, heritage specialists determined how many and which sites overlap with motorized areas and motorized dispersed camping corridors per Alternative. Sites with missing site records, and sites evaluated as Not Eligible for the NRHP were not included in this assessment. This left 719 remaining sites which were analyzed using hard copy site files. An additional 300 sites were randomly selected across the Forest and outside all proposed TM designations, for comparing the No Action Alternative with Action Alternatives. These sites were randomly selected using GIS from both high and low site density areas throughout the Gila NF, excluding motorized dispersed camping corridors, and existing non-motorized areas on the Gila NF (wilderness and other areas restricting motorized vehicles). In total, heritage resource specialists reviewed 1,019 sites for risk analysis.

Because site records for previously recorded sites vary in the extent to which they meet current professional standards and the degree to which site condition is documented, especially as it relates to motorized camping and vehicle impacts, data collected on site conditions from site records is variable and limited. Limitations of this analysis method may affect results. Sites may not have been visited in several years; site reports may not contain information specific to this analysis; and site conditions may have changed. Site documentation was considered adequate when the site report included detailed information on the site as well as site maps. Full Laboratory of Anthropology site records are found in site files

beginning the early 1990s. Heritage specialists determined the adequacy of site documentation for each site (Tables 1 and 2). For MDC corridors analysis, 52-55% of sites within Alternatives C, D, F, and G were reported as having adequate site documentation. Only 47% were reported adequate for Alternative B. All sites within motorized areas for Alternatives C, F, and G were reported as having adequate site documentation.

Table 1: Adequacy of documentation for previously recorded sites within MDC corridors

Adequacy of Site Documentation	B	C	D	E	F	G
Adequate	470 (46%)	370 (52%)	226 (54%)	N/A	307 (52%)	263 (55%)
Inadequate	549 (54%)	346 (48%)	191 (46%)	N/A	285 (48%)	219 (45%)
Total	1,019	716	417	N/A	592	482

Table 2: Adequacy of documentation for previously recorded sites in Motorized Areas

Adequacy of Site Documentation	B	C	D	E	F	G
Adequate	470 (46%)	3 (100%)	N/A	N/A	3 (100%)	3 (100%)
Inadequate	549 (54%)	0 (0%)	N/A	N/A	0 (0%)	0 (0%)
Total	1,019	3	N/A	N/A	3	3

Scoring:

Risk analysis measures cultural site condition. A site's score is based on 29 elements within four categories: road-site intersection or overlap, camping disturbance, authorized activities, and unauthorized activities (see Appendix D *in USDA Forest Service 2010c*). Each site can be placed into one of four levels of impact depending on its score (Table 3).

Table 3: Risk Analysis Impact Levels (Also see Appendix D *in USDA Forest Service 2010c*)

Impact Level	Number of Points
No effect	0 points
Low	1-3
Moderate	4-6
Severe	7+

Risk Analysis Elements for Effects Assessment

For MDC, heritage specialists specifically looked for impacts such as dismantling site structures for campfire rings or using cultural materials in campfires, the presence of one or more campfire rings, presence of modern trash, user-created ruts outside of existing road prisms, use of structural stone in campfire rings, and camping impacts that appear to be less than 10 years old.

For unauthorized activities on Forest, heritage specialists specifically looked for evidence of looting, modern graffiti, pot hunting, collectors' piles, the removal of structural stone from features, natural erosion or bioturbation, human-created non-motorized trails (foot, equestrian, etc.), and wildfire.

For authorized Forest activities, site records were examined for impacts to cultural resources by construction and development (primarily roads and associated engineering features such as culverts,

bridges, etc.), grazing, range/wildlife habitat improvement, erosion relating to construction/ development and grazing activities, fences, utilities, formal foot or equestrian trails, and prescribed fire/vegetation management projects. *Note: Originally, the Risk Analysis worksheet stated that authorized Forest activity disturbances had to be causing an adverse effect to be counted. However, in this analysis, most disturbances were counted if they were simply noted even without a clear indication of level of effect. Therefore, they do not necessarily represent adverse effects.*

For motorized routes, cultural sites were ranked by the number of roads that intersect or overlap with the site. Effects from all roads were examined, including those considered exempt under the Travel Management protocol (USDA-Forest Service Southwestern Region; New Mexico State Historic Preservation Officer 2007: 69-70).

Results of the Risk Analysis

In the DEIS, Table 4 was used to show that motorized dispersed camping (MDC) effects are common to all alternatives. However, the number of sites impacted by these effects will change as the number of acres and sites per alternative also change. The risk assessment is used to show these trends (USDA Forest Service 2010a: 236 and 237).

Table 4: Number of sites with MDC Impacts per alternative from literature search

Sites with MDC Impacts Only	B	C	D	E	F	G
No Impact	915	634	363	N/A	527	421
Low, Moderate, or Severe Impacts	104	82	54	N/A	65	61
Total Sites	1,019	716	417	N/A	592	482

In the DEIS, Table 5 was used to show the results of the Risk Analysis for sites that were reviewed through the literature search. It displays the number of sites per Alternative that have at least one impact reported from MDC, Route Intersections, and/or appear to have occurred as a result of Authorized FS disturbance.

Table 5: Displays the number of sampled sites per alternative that have reported at least one impact from MDC, Route Intersections, and/or appear to have occurred as a result of Authorized FS disturbance.

Types of Impacts	B (1,019 sites)	C (716 sites)	D (417 sites)	E (0 sites)	F (592 sites)	G (482 sites)
Motorized Dispersed Camping Disturbance	104	82	54	N/A	65	61
Route-Site Intersections	268	217	140	N/A	184	160
FS Authorized	391	294	184	N/A	243	202

These disturbances may represent direct, indirect, and cumulative effects of past activities on the Gila National Forest. In the DEIS, this table was used in the Cumulative Effects section to show that past activities may have impacted some cultural resources across the Forest, confirming potential risk of cumulative effects from past activities. However, as explained in the Cumulative Effect section of the DEIS and the Cumulative Effect section in this report, such effects may have occurred before Section 106 of the NHPA was fully implemented on the forest in the mid-1970s (USDA Forest Service 2010a: 245-246.

Appendix E: Gila NF Risk Analysis and Effects to Cultural Resources as Used in Section 106 Consultation and Compliance

(Includes Revised Effects to Cultural Resources and Risk Analysis Form and Camping Disturbance Worksheet)

A risk analysis and assessment of effects tool for cultural sites was developed by Forest archaeologists to determine types of existing disturbance at sites in proposed MDC/MBGR corridors, motorized areas, and newly proposed route corridors. A worksheet was created to identify, measure, and rank these disturbances, with special emphasis on effects from motorized access and camping. The main premise of this assessment is that past effects are likely to continue at the same level in the future, allowing inferences about effects of Travel Management designations.

For camping disturbance, heritage specialists specifically looked for disturbances such as dismantling site structures for stone campfire rings or using cultural materials in campfires (historic wood, for example). Other effects include the presence of more than one campfire ring, modern trash, and vehicle-created ruts outside existing road prisms, and camping disturbances that appear to be less than 10 years old.

For motorized disturbances from routes, cultural sites were ranked by the number of roads that intersect or overlap the site. Effects from all roads were examined, including those considered exempt under the Travel Management protocol (USDA-Forest Service Southwestern Region; New Mexico State Historic Preservation Officer 2007: 69-70).

Information on two other categories, authorized Forest Service activities and unauthorized activities, were also gathered. However, these categories became irrelevant to the discussion of TM related effects.

An elaborate scoring system based on all four categories was used with this analysis. However, it was determined that the scoring system skewed the data, because the risk analysis recorded more possible site disturbances than just those related to camping and motorized use. This scoring system was eventually abandoned (a revised version is seen in here).

Contractors and FS archaeologists used the risk analysis while performing TM surveys, and while updating known cultural sites in previously surveyed areas. In the field, this tool helped surveyors focus on the types of disturbances camping and motorized access can have on a site. Ultimately, it helped get a better description of the site condition. Each site has been or will be evaluated in the field, or by using information from hard copy LA forms, site sketch maps, and location maps.

While the risk assessment was originally used to determine several different types of disturbances at a site, disturbances related to camping and motorized access became most important. These disturbances are the ones that are most helpful in addressing potential TM effects, and the presence, absence, and degree of these disturbances helped determine site recommendations/treatments for this project.

Note: The Risk Analysis score is simply a tool to indicate that a site may need treatment measures. Regardless of score, each site has been and will be carefully examined for all possible direct and indirect effects of the proposed actions including looting and vandalism. Potential adverse effects will be mitigated or avoided, as appropriate.

Revised: Effects to Cultural Resources and Risk Analysis

Assumptions:

- By definition, most cultural sites in this project area have good access due to their location within 300' either side of existing motorized routes.
- The presence, nature, and extent of some site disturbances may relate to ease of access.
- Most cultural sites on Forest exhibit some level of vandalism/looting, so the presence of this disturbance is not necessarily related to access provided by motorized routes and/or motorized dispersed camping.
- Previous cultural site disturbance is a predictor of the probability for future site disturbance.
- All alternatives will reduce the likelihood of cultural site disturbance due to major decrease in acreage/miles open to motorized travel and camping Forest-wide.
- Effects identified in items 1 through 3 below contribute to the assessment of cumulative effects, because they are Forest-authorized in the Forest's Land Management Plan, or on a project-by-project basis, including compliance with NEPA and the National Historic Preservation Act.
- This analysis focuses on known cultural sites in the project area that were either (1) newly recorded during surveys performed for travel management project, or (2) previously recorded and revisited/updated for travel management analysis or within the last 5 years.
- If the items listed below are present, but are not causing site disturbance, they were not given any points.
- Effects and risk identified here in items 1-5 for known sites equate to NEPA existing condition.

Site eligibility:

What is eligibility to the National Register of Historic Places (NRHP) for each cultural resource?

Not Eligible:	Go no further with analysis
Eligible:	Continue with analysis
Unevaluated:	Treat as eligible and continue with analysis

Effects:

Information on site effects is taken from existing site documentation and/or site re-visits and updates performed for this project. Data exclude areas exempt from SHPO consultation under Region 3 Travel Management protocol.

Existing effects related directly to motorized routes and camping:

1. Cultural site is crossed by roads, motorized trails, turnouts and/or parking areas. (0-3 points)

None (no crossings & within corridor) =	0 points
Low disturbance (one crossing) =	1 point
Medium disturbance (2 crossings) =	2 points
High disturbance (3+ crossings) =	3 points

2. Cultural site has evidence of previous motorized camping disturbance. **Each** of the following receives **1 point**: (0-9+ points)

    Presence of one modern/recent fire ring or campfire residue

    Multiple fire rings or campfires

    Modern/recent trash

    Large amounts or multiple locations of modern/recent trash

    Rocks for fire rings were taken from cultural site (indirect effect of authorized camping)

    Evidence for more than one incident of motorized camping occupation/ disturbance

    User-created ruts outside exempted road & parking areas

    Scavenging/dismantling of cultural sites related to motorized camping

    Impacts appear less than 10 years old

    Other evidence of modern campsite(s), please specify; 1 point each

Other effects not necessarily related to motorized camping: Used for NEPA Analysis to get to cumulative effects

3. Forest-authorized disturbances to cultural sites (with NEPA and NHPA compliance). Each receives **1 point**: (0-8+ points)

    Grazing

    Range/wildlife improvement

    Other Fence (not related to Range)

    Utility

    Construction/development

    Formal foot or equestrian trail

    Other erosion caused or facilitated by Forest-authorized activities

    Prescribed fire/vegetation management

    Other (please identify; 1 point each)

4. Disturbances to cultural sites not authorized by the Forest (illegal activities, natural disturbances, etc.); not having prior 106 compliance. Each receives **1 point**: (0-9+ points)

    Modern or recent graffiti on rock art or cultural features

    Multiple instances of recent graffiti

Pot hunting hole/Old incident of pot hunting

Multiple pot hunting holes

Collector's piles

All types of scavenging/dismantling at cultural sites

Natural erosion or bioturbation

Human-created unauthorized non-motorized trail (foot, equestrian, etc.)

Wildland fire

Other (please identify; 1 point each)

Other situations:

5. These kinds of cultural resources receive **0 points** and no further analysis or treatment in this process:

   Field-checked site was not relocated or does not exist anymore; Not Eligible/No Effect.
   Multiple site disturbances that would normally yield high point values have instead resulted in complete destruction, loss of data potential and integrity, and an evaluation of Not Eligible.
   Note: 'Not Eligible' sites must have concurrence from SHPO to receive a score of zero. New 'Not Eligible' sites that don't yet have SHPO concurrence must be scored under this risk analysis. SHPO concurrence status must be checked on older 'Not Eligible' sites, to make sure this evaluation is official.

Risk Analysis:

- A maximum of 29+ points can be achieved for disturbances at each cultural resource site.
- Most sites will not exhibit most of the effects itemized in the lists above, so the number of points for levels of impact is lower than might be expected.
- 12+ of these points are for effects related directly to past motorized camping; 17+ points are for effects that may have causes other than motorized camping.
- Forest-authorized disturbances are separated in items 1 through 3 above because they contribute to the assessment of cumulative effects, and item 4 does not.
- Sites having no disturbances are considered to have No Effect from the project. Adverse effects by this project to cultural sites will be mitigated, resulting in an overall No Adverse Effect assessment.

1. What are total points for disturbances to each cultural resource (effects from items 1 through 4 above)?

0 points:	No Effect (No disturbances, no site, not eligible, or complete destruction)
1-3 points:	Low impacts (Little disturbance, few or no treatment recommendations)
4-6 points:	Moderate impacts (Can be dealt with using treatments)
7+ points:	Severe impacts (Drop from designation or perform extensive mitigation)

REVISED: It was determined that the first two categories were most important to the assessment of sites within the TM project area. Categories 3 and 4 were removed from the analysis; this dropped the possible total of points to 12. Therefore, the number of points representing differing levels of effects also changed.

0 points: No Effect (No disturbances, no site, not eligible, or complete destruction)

1-2 points: Low impacts (Little disturbance, few or no treatment recommendations)

3-4 points: Moderate impacts (treatment recommendations or removal of site from project area may be required)

5+ points: Severe impacts (treatment recommendations or removal of site from project area may be required)

2. Choose from the following treatment/mitigation measures for cultural resource sites with low, moderate or severe motorized camping disturbances. Treatments with an asterisk are identified as Protection Measures in Section IX of Region 3 Travel Management protocol. Selection of particular treatments and recommendations need to be reasonable and justifiable.

Immediate, requiring no 106 compliance:
- None
- *Drop from designation
- *Revise designation
- *Leave off MVUM

Phased, requiring additional future 106 compliance:
*Re-route or modify designated routes to protect historic properties
- Fence or barrier
- Signage
- *Monitor (part of monitoring plan)
- Interpretation
- Data Recovery
- Test excavation
- National Register evaluation
- No Trace fire rings, trash, etc.
- Mitigation by detailed documentation and recording
- HABS/HAER documentation, etc.
- *Temporary emergency closures to address effects to historic properties
- Other

Camping Disturbances to Sites

Please mark each disturbance and elaborate in space provided if needed.

1. Cultural site is crossed by roads, motorized trails, turnouts and/or parking areas.

Roads:	Please Check:	Notes:
None (no crossings & within corridor)		
Low disturbance (one crossing)		
Medium disturbance (2 crossings)		
High disturbance (3+ crossings)		

2. Cultural site has evidence of previous motorized camping disturbance.

Disturbance:	Please Check:	Notes:
Presence of one modern/recent fire ring or campfire residue		
Multiple fire rings or campfires		
Modern/recent trash		
Large amounts or multiple locations of modern/recent trash		
Rocks for fire rings were taken from cultural site (indirect effect of authorized camping)		
Evidence for more than one incident of motorized camping occupation/ disturbance		
User-created ruts outside exempted road & parking areas		
Scavenging/dismantling of cultural sites related to motorized camping		
Impacts appear less than 10 years old		
Other evidence of modern campsite(s), please specify		

Other effects not necessarily related to motorized camping**.**

3. **Disturbances to cultural sites not authorized by the Forest (illegal activities, natural disturbances, etc.); not having prior 106 compliance**. (Category commonly referred to as: Unauthorized Disturbances or Activities)

Disturbance:	**Please Check:**	**Notes:**
Modern or recent graffiti on rock art or cultural features		
Multiple instances of recent graffiti		
Pot hunting hole/Old incident of pot hunting		
Multiple pot hunting holes		
Collector's piles		
Any scavenging/dismantling at cultural sites		
Natural erosion or bioturbation		
Human-created unauthorized non-motorized trail (foot, equestrian, etc.)		
Wildland fire		
Other: Specify		

4. **Forest-authorized disturbances to cultural sites (with NEPA and NHPA compliance). Note: Describe the disturbance and severity, state whether or not you think the disturbance may be an adverse effect.**

Disturbance:	**Please Check:**	**Notes:**
Grazing		
Range/wildlife improvement		
Other Fence (not related to Range)		
Utility		
Construction/development		
Formal foot or equestrian trail		
Other erosion caused or facilitated by Forest-authorized activities		
Prescribed fire/vegetation management		
Other: Specify		

Appendix F: Looting and Vandalism Analysis

The Gila National Forest's NEPA analysis for motorized routes in the Travel Management Rule DEIS encompassed an Area of Potential Effect (APE) of 10ft either side of the centerline for trails and 50 feet either side of the center line for roads. These distances are based from the average width of trails and roads, including road side parking. Motorized dispersed camping corridors were analyzed at 300 feet either side of the road centerline.

Commenters were concerned that the Gila NF did not fully analyze indirect effects to sites from motorized access. They voiced concern that the analysis areas for routes and camping corridors were too small to capture the full potential of indirect effects, specifically looting and vandalism, associated with motorized route designation and access.

To address these comments, the Gila NF analyzed sites within 100 meter (m) interval distance bands (0-100m, 101-200m, etc.) from routes. The main objective of the study was to determine if there was a relationship between the distance a site is located from a route and the presence/absence of looting or vandalism. This will allow the Gila NF to determine if its NEPA analysis was adequate in analyzing indirect effects of motorized access.

Method

In November 2012, the Gila National Forest analyzed sites within 100m interval distance bands from routes. The analysis included a random sample of 5% of all eligible and unevaluated prehistoric and historic structural sites, including petroglyphs and pictographs, per graded distance.

For the analysis, 5,569 sites within the Heritage GIS Database were analyzed against all routes used to create the Travel Management Alternatives. All system and non-system routes were used regardless of jurisdiction, ownership, maintenance level, or type of route. These include user routes brought forth by the public during Travel Management scoping. Some of these routes are currently designated as non-motorized trails. However, they were brought forth by the public and are assumed to get some motorized traffic. Including all of these routes, provides the broadest analysis potential for known past and present motorized access to the forest. In GIS, a spatial join was utilized to identify and calculate the distance between sites and their closest route. These sites were then sorted within 100 meter interval distance bands from 0-1801m+ (Table 1). Distances were rounded to the nearest meter. Finally, the Hawthes Tool GIS Package was used to pick a random sample of 5% of sites per band.

Then, the Gila NF analyzed each site record for past disturbances using the Risk Analysis form (Appendix E). This form was developed to identify direct, indirect, and potential cumulative effects to cultural resources related to several categories of disturbance. The 'Unauthorized Disturbance' section in the Risk Analysis provides several examples of human caused or related categories that can also be considered indirect effects from motorized access.

The 'Unauthorized Disturbance' section was reviewed and it was determined that only those categories related to human disturbance would be useful in this exercise. These categories include modern graffiti, pothole/old pothole, collector's pile, scavenging/dismantling site, and other. Acts of vandalism are considered to be modern graffiti, collector's piles, and scavenging/dismantling of sites. Looting is captured through the pothole/old pothole category. The 'Other' category was included because many of these disturbances were human in nature and considered acts of looting or vandalism, like a cairn potentially built from structural rock, etc. Categories recording multiple incidents of potholes or graffiti were not necessary to record for the study, because the study was looking at presence/absence of the activity.

Table 1: Number of Eligible and Unevaluated sites per distance band; number of Structural Sites analyzed per band; and Percentage of Sites used in Analysis for the Looting/Vandalism Literature Search Sample.

Note: 10 sites were inadvertently left out of the analysis.

Band (Distances in Meters from Closest Route)	Total # of Eligible and Unevaluated Sites/Band	Percentage of Total # of Sites within Each Band	Total # Sites in Analysis Band	Percentage of Total Sites in Analysis
0-100	3191	57.30%	160	5.01%
101-200	786	14.11%	40	5.08%
201-300	403	7.24%	21	5.21%
301-400	285	5.12%	15	5.26%
401-500	198	3.56%	10	5.05%
501-600	163	2.93%	9	5.52%
601-700	94	1.69%	5	5.31%
701-800	64	1.15%	4	6.25%
801-900	50	0.90%	3	6.00%
901-1000	40	0.72%	2	5.00%
1001-1100	31	0.56%	2	6.45%
1101-1200	33	0.59%	2	6.06%
1201-1300	26	0.47%	2	7.69%
1301-1400	22	0.40%	1	4.54%
1401-1500	15	0.27%	1	6.67%
1501-1600	17	0.31%	1	5.88%
1601-1700	19	0.34%	1	5.26%
1701-1800	13	0.23%	1	7.69%
1801m+	119	2.14%	6	5.04%
Total	5569		286	5.14%

Data

Cultural Resource Sites:

At the time of this analysis, the Gila NF cultural resources data set included 6559 sites in the corporate GIS layers. This database was built using a variety of data entry methods, including migrating site data from the New Mexico Archaeological Records Management Section (ARMS) database for all sites within the Gila NF's administrative boundaries.

There are certain discrepancies in the data set. Because all ARMS sites located inside the Forest's administrative boundaries were included in the database, a number of cultural sites found in it are located on State lands, private land inholdings, Bureau of Land Management (BLM), and National Park Service (NPS) lands. Some sites that were transferred from ARMS did not have FS site numbers. These sites were given temporary FS numbers which included the number '99.' Some of these sites are duplicates of existing FS sites, some are on non-Forest land and others are sites that, for one reason or another, were never given FS site numbers. At the time of this analysis, there were about 589 '99' sites within the GIS database. Due to lack of information on these sites, the Gila NF removes them from any analysis that requires record searches.

Other discrepancies with ARMS data include duplications or errors for known sites, site numbers, site locations, and incorrect information in fields such as NRHP site eligibility. In the case of NRHP eligibility, data from GIS indicates that 47 National Register Listed sites are within the boundaries of the Gila NF. However, only 8 of these are located on Forest Service lands. Almost all of the other Listed sites are also '99' sites; as a result, these were removed from the analysis. The Gila NF corrects all of these discrepancies as they are found and/or as sites are visited through forest projects.

Sites that are ineligible to the NRHP are not included in this analysis because the Forest Service and all Federal agencies are not required to consider the effects of their projects on these sites. There were 398 ineligible sites in the Gila NF GIS database. All sites that are listed, eligible, or unevaluated/ undetermined for the NRHP are included in this analysis regardless of whether they were identified through cultural resource survey or other means. At the time of the analysis, there were 47 Listed, 1,710 eligible, and 4,404 unevaluated sites within the Gila NF GIS database.

For this analysis, the Gila NF removed the '99' and ineligible sites. (Note: Seven '99' sites are also not eligible). Another 10 sites were inadvertently left out of the analysis. These were located in the 0-100m distance band. Therefore, a total of 5,569 sites were used in this analysis.

Data Limitations

As with any study based on legacy data, there are limitations of the data set. Because site records for previously recorded sites vary in the extent to which they meet current professional standards and the degree to which site condition is documented, data collected on site conditions from site records is variable and limited. Limitations of this analysis method may affect results. Sites may not have been visited in several years, site reports may not contain information specific to this analysis, or site conditions may have changed.

Site documentation was considered adequate when the site report included detailed information on the site as well as supporting documentation. While some site forms had detailed information on sites, they may have been deemed incomplete or less than adequate due to lack of supportive documents like site maps, photographs, and/or site location maps. Full Laboratory of Anthropology site records are found in site files beginning in the early 1990s. Heritage specialists determined the adequacy of site documentation for each site. Of the 286 sites used for the analysis, 124 were deemed adequate and 164 were deemed incomplete or less than adequate.

Observations of Data

On the Gila NF, at the time of this analysis, approximately 3,191 (57.3%) of the known 5,569 cultural resources sites were located within 0-100m of a route (Table 1). Currently and historically, projects on the Gila NF are limited by access. The Gila NF has created many routes to access areas on the forest and, also, proposed projects where access through routes is already available. This is demonstrated by the number of sites per distance band. As discussed, most known sites are found within 100m of a route. As the distance from routes increases, the number of known sites drops drastically. For example, 786 or 14.11% known sites are located between 101-200m (Table 1).

It is not that large numbers of sites do not exist past 100m from routes or that these sites do not show signs of looting or vandalism, it is that forest projects and, therefore, archaeological survey, take place most often near routes, making the discovery of such sites less likely.

In several cases, sites found farther from routes were located through non-project work or brought to the attention of FS Archaeologist by other FS employees or the public. In some cases, these sites were reported because they were being or thought to be subjected to looting or vandalism.

Table 2: Types of 'Unauthorized Disturbances' and number of sites within each band that has a specific disturbance. The last three columns show the Total Number of Sites/Band in the Analysis, the Number of Sites/Band with at Least One Disturbance, and Percentage of Sites/Band with at Least One Disturbance.

Distance Bands in Meters	Modern Graffiti	Pot Hole/ Old Pothunting	Collector's Piles	Scavenging / Dismantling of Sites	Other	Total # of Sites/ Band in Analysis	# of Sites/ Band with at Least One Disturbance	Percentage of Sites/ Band with at Least One Disturbance
0-100	2	43	2	10	3	**160**	**51**	**31.88%**
101-200	0	13	0	1	2	**40**	**14**	**35%**
201-300	1	2	0	0	0	**21**	**3**	**14.29%**
301-400	0	3	1	0	0	**15**	**4**	**26.67%**
401-500	0	0	0	0	0	**10**	**0**	**0%**
501-600	0	1	0	0	1	**9**	**1**	**11.11%**
601-700	0	0	0	0	0	**5**	**0**	**0%**
701-800	0	1	0	0	0	**4**	**1**	**25%**
801-900	0	0	0	0	0	**3**	**0**	**0%**
901-1000	0	0	0	0	0	**2**	**0**	**0%**
1001-1100	0	1	0	0	1	**2**	**1**	**50%**
1101-1200	0	0	0	0	0	**2**	**0**	**0%**
1201-1300	0	1	0	0	0	**2**	**1**	**50%**
1301-1400	0	0	0	0	0	**1**	**0**	**0%**
1401-1500	0	0	0	0	0	**1**	**0**	**0%**
1501-1600	0	0	0	0	0	**1**	**0**	**0%**
1601-1700	0	1	0	0	0	**1**	**1**	**100%**
1701-1800	0	0	0	0	0	**1**	**0**	**0%**
1801+	0	4	0	0	0	**6**	**4**	**66.67%**
Totals	3	70	3	11	7	**286**	**81**	**28.32%**
Percentage of Sites with Disturbance in all Bands	1.05%	24.48%	1.05%	3.85%	2.45%	NA	NA	NA

A total of 286 structural sites (5.14% of all sites) were reviewed for this analysis (Table 1). Results show that 81 or 28.32% of these sites exhibit at least one looting or vandalism disturbance (Table 2). These sites are located within 10 distance bands 0-100m, 101-200m, 201-300m, 301-400m, 501-600m, 701-800m, 1001-1100m, 1201-1300m, 1601-1700m, and 1801+m (Table 2).

Several of the distance bands have less than 100 sites per band; therefore, the sample for those bands contain 5 or less sites within the analysis (Table 1). This is true for 12 out of 19 distance bands (601-700m thru 1701-1800m). A raw data comparison of these distance bands to ones with higher sampling numbers is difficult. For example, in band 0-100m, there are 160 sampled sites. Fifty-one or 31.88% of the sampled sites have at least one looting or vandalism disturbance. In band 1601-1700m, there is one site in the sample. This site has at least one pothole, so 100% of the sample shows at least one looting or vandalism disturbance (Table 2). Similar results occur when comparing individual disturbance categories between bands.

The Gila NF wanted to be able to better compare the raw data between distance bands. To do this, the Forest collapsed the last 13 distance bands into one band 601-1801+m. This is a logical break in the data given 12 of these distance bands contain less than 100 total sites and, therefore, 5 or less sampled sites per band.

Table 3: Table with Collapsed Distance Bands showing Disturbance Categories, Total Number of Sites in Band/Analysis, Number of Sites/Band with at Least One Disturbance, and the Percentage of Sites/Band with at Least One Disturbance.

Bands in Meters	Modern Graffiti	Pot Hole/ Old Pothunting	Collector's Piles	Scavenging/ Dismantling of Sites	other	Total Number of Sites/Band in Analysis	# of Sites/Band with at Least One Disturbance	Percentage of Sites/Band with at Least One Disturbance
0-100	2	43	2	10	3	160	51	31.88%
101-200	0	13	0	1	2	40	14	35%
201-300	1	2	0	0	0	21	3	14.29%
301-400	0	3	1	0	0	15	4	26.67%
401-500	0	0	0	0	0	10	0	0%
501-600	0	1	0	0	1	9	1	11.11%
601-1801+	0	8	0	0	1	31	8	25.81%
Totals	**3**	**70**	**3**	**11**	**7**	**286**	**81**	**28.32&**

Collapsing bands 601-1800m+ into one band brings the total number of sites within it to 543, of these 31 or 5.71% are in the sample (Table 3). Eight or about 26% of these sites have at least one looting or vandalism disturbance (Table 3).

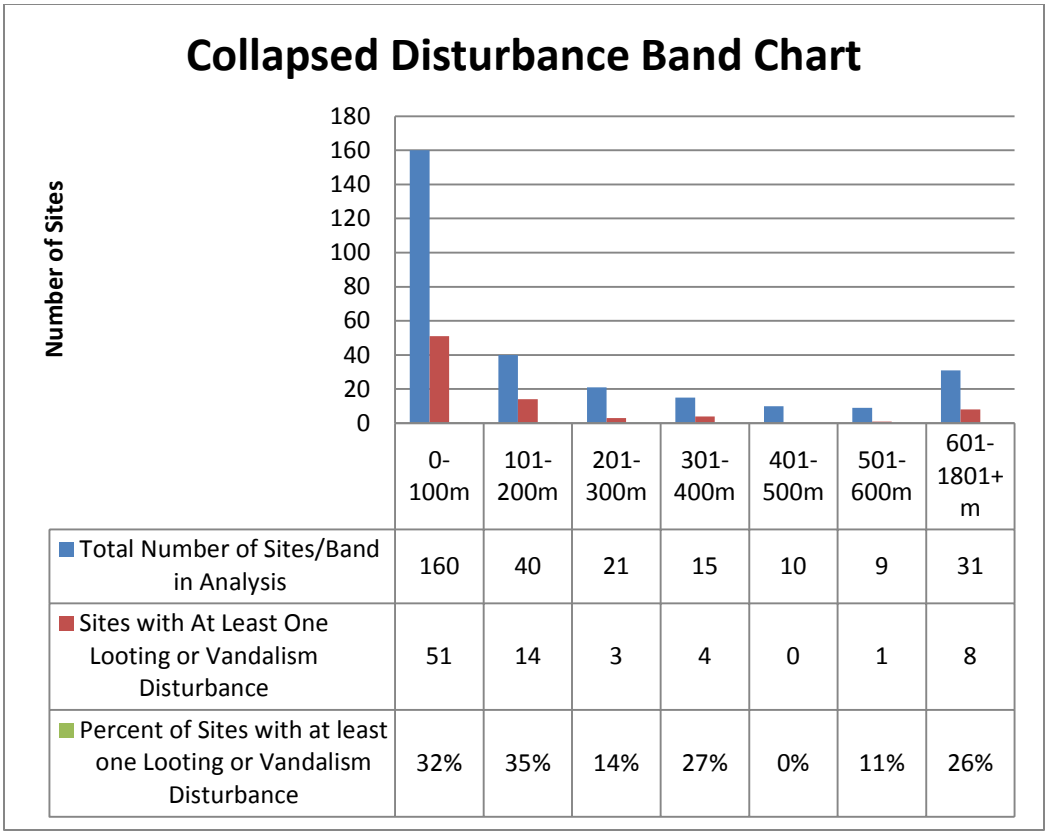

Chart 1: Collapsed Distance Band Chart displays the number of sites per band used in the analysis, the number of sites per band with at least one looting or vandalism disturbance, and the percent of sites with at least one looting or vandalism disturbance (rounded to a whole number).

Chart 1 shows the percentage of sites per band that have at least one looting or vandalism disturbance. Over 25% of sampled sites in bands 0-100m, 101-200m, 301-400m, and 601-1801+m have at least one disturbance. A larger percentage is seen in bands 0-100m (32%) and 101-200m (35%). However, between these and bands 301-400 (27%) and 601-1800+m (26%), there is less than 10% difference. For bands 201-300 and 501-600, the percentage of sites with one disturbance is lower at 14-11% of sites. Band 401-500m reports no sites with looting or vandalism disturbances.

These results do show that sites within 0-100m and 101-200m have a slightly higher percentage of sites with at least one looting or vandalism disturbance than do bands 301-400m and 601-1801+m. And, much higher percentage than do bands 201-300m, 501-600m, and 401-500m. However, these results also demonstrate that looting and vandalism occur forest wide**.**

While the percentage of sites with at least one looting and vandalism disturbance is higher at bands 0-100 and 101-200m (Chart 1), sites at farther distances from routes are experiencing these disturbances as well. The Gila NF conducted a series of Chi-square calculations to continue investigating the relationship between the distance a site is located from a route and the presence/absence of looting or vandalism.

The Chi-square (χ^2) statistic measures the observed frequency of a given set of variables and compares this distribution to expected values based on a theoretical probability distribution. This statistic is deemed to be somewhat appropriate given the nature of the data used. The Gila NF analysis meets certain assumptions of the test statistic (e.g. nominal/categorical scale variables and a random sample) though other assumptions are not met (e.g. expected values ≥ 5). To aid in remedying this weakness in the

analysis, a resampling strategy using Monte Carlo simulations was utilized. This method essentially exchanges values randomly from within the original dataset and uses the results of these permutations to derive a sample distribution. Unlike traditional permutation tests where all possible random placements are used to calculate the sample distribution, Monte Carlo simulations use a user defined number of random permutations (in this analysis N=100000). In this analysis, the Gila NF considered a statistically significant relationship to be one that falls below or equal to the 95% confidence interval (p<=0.05).

The Gila NF ran these analyses three times. The first analysis was used on the distance bands seen in Table 2. As required by the statistical analyses, only distance bands with at least one disturbance were used. Therefore, 10 distance bands (0-100m, 101-200m, 201-300m, 301-400m, 501-600m, 701-800m, 1001-1100m, 1201-1300m, 1601-1700m, 1800+m) were analyzed. The results of the Gila NF analyses demonstrated that there was no statistically significant difference between different distance bands and the presence/absence of looting or vandalism disturbances to cultural sites [$\chi^2 = 33.15$; $df = 36$; $p = 0.607$ ($p\ \chi^2 \geq$ obs. = 0.488)]. In this instance the "$p\ \chi^2 \geq$ obs. = 0.488" notation represent the results of the Monte Carlo simulations.

The second analysis compared the collapsed bands seen in Table 3. Again, only bands with at least one disturbance were used, (0-100m, 101-200m, 201-300m, 301-400m, 501-600m, and 601-1801+m). The analyses demonstrated no statistically significant difference between different distance bands and the presence/absence of looting or vandalism disturbances to cultural sites [$\chi^2 = 27.41$; $df = 20$; $p = 0.124$ ($p\ \chi^2 \geq$ obs. = 0.193)].

On the third analysis, the Gila NF compared the first four distance bands (0-100m, 101-200m, 201-300m, and 301-400m) to see if there were any differences between these distance bands and the frequency of occurrences of looting and vandalism disturbances to cultural sites. This analysis was conducted because these four distance bands account for the majority of the variability and disturbances in the data. As with the first two analyses, there is no statistically significant difference between different distance bands and the presence/absence of looting or vandalism to cultural sites [$\chi^2 = 17.69$; $df = 12$; $p = 0.126$ ($p\ \chi^2 \geq$ obs. = 0.177)].

Motorized Cross-Country Travel Discussion

Currently, cross-country travel can occur across the forest. Therefore, the present state of looting and vandalism across the forest may be a result of this access.

The Gila NF included unauthorized routes and non-motorized routes. Some of the non-motorized routes were brought forth by the public to be proposed as 2 wheel vehicle routes in Alternative C. It is assumed that these non-motorized routes see some motorized use. One hundred thirty-six out of all the 5,569 sites lie nearest these routes. Out of these, 5 were randomly chosen through the sample process. Four of the sites are located between 0-100m from the route and one is located 401-500m from the routes. Only one suffers from looting as seen through the presence of at least one pothole. This site is located within 13m of a route that is currently a non-motorized trail. The trail is being proposed as a motorized two-wheel vehicle trail in Alternative C. While this route may have seen motorized use, the current designation as a non-motorized trail, suggests that the looting associated with it could be related to foot traffic, not necessarily, motorized access.

Utilizing the Risk Analysis form, the Gila NF attempted to verify whether or not sites within the sample had two-tracks or user created ruts running through them. These would be unrelated to the routes used in this analysis. Sites that are located on analyzed routes were not reviewed. These are already accessible due to their proximity to the analyzed routes.

The Gila NF reviewed sites that were several meters away from known routes, but were noted in their site files as having ATV, two-track routes, or 'user-created' ruts or routes going through them. Each site file and GIS location was reviewed. Approximately, 12 sites have potential signs of cross-country travel. Eight of these sites are located within 0-100m of an analyzed route; three within 101-200m and one within 201-300m. Of these, 4 display signs of looting and vandalism. One is located in band 0-100m, 2 in band 101-200m, and 1 in band 201-300m. While the motorized cross-country travel may or may not be related to the actual looting or vandalism seen at these particular sites, motorized cross-country travel appears to be present on these sites.

Motorized cross-country travel is prohibited through the Travel Management Rule. This means that vehicular off-road travel will not be permitted, except in designated MDC corridors, MBGR, motorized areas, or under a special use authorization for motorized big game retrieval. Vehicles must stay in the confines of routes or corridors for driving; access outside of these routes will be reduced to foot traffic or other authorized access (equestrians, pack animals, special uses, for example).

The prohibition of motorized cross-country travel will be beneficial to cultural resources by reducing ease of access to sites located in areas that do not have designated routes. This will considerably reduce the potential for direct and indirect effects from motorized use.

Conclusion

The Gila NF conducted a Looting and Vandalism Analysis on 286 prehistoric and historic structural sites, including petroglyphs and pictographs, within 100 meter interval distance bands from all routes used to create the Travel Management Action Alternatives. The main objective of the study was to determine if there was a relationship between the distance a site is located from a route and the presence/absence of looting or vandalism.

The analysis results show there are a higher percentage of sites with disturbances like looting or vandalism near routes, however, sites at farther distances from routes are experiencing these disturbances as well. To better understand and compare these results, the Gila NF ran statistical analyses using Chi-square calculations with Monte Carlo Simulations. These analyses show no statistical difference between distance bands and the number of sites that have these disturbances.

The results do not show a strong relationship between the distance a site is from a route and the presence/absence of looting and vandalism. Therefore, the presence of the routes may not be a precursor for these disturbances.

On the Gila NF, vandalism and looting occur forest wide. There are documented cases of people vandalizing and looting sites adjacent to routes that provided access to the area. However, there are also documented cases where individuals have hiked several miles into Wilderness Areas to participate in these illegal acts. Knowing this, factors like site type, size, and visibility may be more accurate indicators of vandalism and looting than the distance a site is from a route.

Analysis for motorized routes in the FEIS includes an APE for roads and trails at 15 meters from the centerline of both. This change from the DEIS represents an effort to treat trails and roads similarly, to include information from recent TM surveys, and to include more area than may be disturbed by motorized use. Motorized dispersed camping corridors are analyzed at 300 feet either side of the road centerline. This area represents the land that may be disturbed by motorized use for motorized dispersed camping corridors.

Some comments to the DEIS suggested using larger analysis areas for MDC corridors and the route system. In the FEIS, the measure of potential or relative risk of direct and indirect effects from designating newly proposed routes, motorized areas, MDC corridors, and MBGR is the number of known sites within the analysis area. The number of known sites within these areas is directly related to how many miles or acres are proposed for each action per Alternative. The Alternatives with higher numbers of miles and acres show higher numbers of known sites, and vice versa. Therefore, the Alternatives proposing more miles or acres per action will pose a higher risk of these effects to cultural resources conversely those proposing fewer miles will pose a lower risk.

Given the new data from this analysis, the idea that relative risk is directly related to the number of miles or acres designated for these actions, and the knowledge that motorized cross-country travel will be prohibited through Travel Management; the Gila National Forest believes that this analysis area adequately measures and addresses indirect effects.