Four-Forest Restoration Initiative
Coconino and Kaibab National Forests
Heritage Specialist Report

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Relevant Federal Laws, Coconino and Kaibab Forest Plans, and Regulatory Directions

Forest Service Heritage Guidance

The Forest Service Manual (FSM) 2360 and individual Forest plans are the primary direction for Heritage resource management practices in the agency. A "Crosswalk" was developed to merge and assess existing Forest plans for this analysis (Appendix A). All standards and guidelines from the existing plans were incorporated into the evaluation of effects for the Four Forest Restoration Initiative (4FRI) Heritage analysis.

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into consideration the effects of their undertakings on properties listed in or eligible for the National Register of Historic Places. Federal Regulations 36 CFR 800 contains procedures for implementing Section 106.

Programmatic Agreement

A Programmatic Agreement (PA) between the Southwestern Region of the Forest Service, the Arizona, New Mexico, Texas and Oklahoma State Historic Preservation Officers (SHPO) and the Advisory Council on Historic Preservation (ACHP) (USDA 2003) guides National Forests in Region 3 in identifying, evaluating and protecting cultural resources on National Forest System lands. Stipulation IV.A 4 of the PA provides for the development of "standard consultation protocols" for certain classes of undertakings where effects on historic properties and resulting protection and treatment are similar and repetitive. Appendix J of the Programmatic Agreement (PA Appendix C) is a protocol for large-scale fuels reduction, vegetation treatment and habitat improvement projects. It was developed in consultation with and the Arizona, New Mexico, Texas and Oklahoma SHPOs, and the ACHP. Additionally, the Kaibab and Coconino Forests developed the *Four Forest Restoration Initiative (4FRI) Heritage Resources Strategy* (the Heritage Strategy*) and NHPA Compliance* (Gifford 2011) (Appendix C), in consultation with the SHPO and the area tribes. PA Appendix J and the Heritage Strategy will be used as the primary guidance for how the FS will meet the Section 106 requirements under NHPA for 4FRI for the Coconino and Kaibab National Forests. The PA Appendix J may be found in Gifford (2011), which is Appendix C of this report; the PA itself.

Other Laws and Regulations

Several other laws address aspects of Heritage resource management on National Forest lands. These include the *Archaeological Resources Protection Act of 1979* (ARPA), as amended. Among other provisions, this act requires tribal notification and consultation regarding permitted removal or damage to archaeological sites on Federal lands. Another relevant legislation is the *Native American Graves Protection and Repatriation Act* of 1990 (NAGPRA). This legislation recognizes tribal affiliation of Native American human remains, associated funerary objects, sacred items and objects of cultural patrimony that may be discovered on public lands and requires consultation prior to their removal. Finally, *the American Indian Religious Freedom Act of 1978* (AIRFA) requires Federal agencies to consider the impacts of their actions on Native American traditional cultural practices and to ensure access to cultural sites.

A number of Executive Orders including 11593 (*Protection of Cultural Environment*), 13007 (*Indian Sacred Sites*), 13175 (*Tribal Consultations*) and 13287 (*Preserve America*) give direction related to Forest Service Heritage Program Management.

Internal guidance that relates to tribal relations and heritage program management is the *USDA Policy and Procedures Review and Recommendations: Indian Sacred Sites* and a related *Memorandum of Understanding* between the U.S. Department of Agriculture, other federal agencies, and the Advisory Council on Historic Preservation. These cover numerous policies related to developing guidance for the management and treatment of sacred sites, standards and requirements for maintaining confidentiality of sensitive information, establishing inter-agency management practices, and other measures to provide better protection for sacred sites. Most recently, the Forest Service has published a proposed rule to implement the 2008 Farm Bill. The *Farm Bill Forest Products Rule* would permit the Forest Service to provide trees and forest products free of charge to Indian tribes for noncommercial traditional and cultural purposes

Affected Environment

Cultural resources, also known as heritage resources or assets, encompass both the remains of the past as well as portions of the landscape important to modern-day cultures. Remains of the past are usually termed archaeological sites or historic properties and are frequently referred to as "sites." Cultural resources are also of considerable importance to scientific researchers as well as the American public who seek to learn from the past. Many present day traditional cultures identify with these sites as part of their cultural identity (Hanson 1999).

The ponderosa pine ecosystem is the focus of the 4FRI Forest restoration project. Within the project area, cultural resources range temporally from prehistoric times through the historic period and into the modern day. Prehistoric sites include rock art, cliff dwellings, pit houses, multiple room pueblos and artifact scatters. Historic resources consist of mills and logging railroads, trails and historic roads such as Beale Road; cabins and homesteads, Forest Service administrative sites, sheep and cattle industry related sites, mining camps, Civilian Conservation Corps remains, and American Indian shelters such as sweat lodges and brush shelters.

Cultural resources also include American Indian traditional use areas and places known as Traditional Cultural Properties (TCPs) (Parker and King 1998). These TCPs hold a central and important position in American Indian culture.

Basis for Evaluation of Effects

The proposed action in the 4FRI DEIS includes ground disturbing activities such as mechanical thinning, hand thinning, stream restoration, temporary road construction, existing and temporary road closures, and fencing. In consultation with the SHPO, the Coconino and Kaibab National Forests developed a document called the *Four Forest Restoration Initiative (*4FRI) *Heritage Resources Strategy and NHPA Compliance* (Gifford 2011) (the Heritage Strategy). Three elements are identified in the Heritage Strategy that would assist in reaching a No Adverse Effect determination for this project.

- The first is the focus on the PA Appendix J. It outlines the consultation protocols and strategies for implementing large-scale fuels reduction, vegetation treatment, and habitat improvement projects.
- The second component is the archaeological site density model created by the Coconino and Kaibab Forests. This model, created using existing site inventory data, identified high and low site densities areas and assists in the design of survey strategies for specific project locations.
- The third aspect is the Heritage Strategy. PA Appendix J requires areas of intensive ground disturbances and areas of high site densities to receive 100% survey. However, the strategy provides that areas of low site density can receive up to 25% of new or additional survey if existing surveys are not considered adequate. Sample survey needs are to be determined by Heritage Program managers on a project by project or individual task order basis (see Gifford 2011:14-17 for details on 4FRI survey strategies).

Phased Section 106 Compliance

Because of the size of this undertaking, implementation would be phased over several years. PA Appendix J allows for the phasing of Section 106 compliance evaluations. PA Appendix J, the Heritage Strategy and the initial 4FRI Section 106 report describe the methods to be used to achieve a No Adverse Effect determination for 4FRI as a whole.

Individual task orders or specific project areas will be evaluated by Forest Heritage Program staff

for inventory needs and then surveyed to the appropriate level as defined in the Heritage Strategy. A Section 106 report will be produced for each project area as they are identified. Consultation with the SHPO and tribes will be completed prior to implementing each task orders.

Existing Condition

The Area of Potential Effect (APE) for the first 4FRI EIS is based on four alternatives. The overall analysis area is 988,930 acres but not all of those acres would be treated. Proposed treatments are as follow: the "no action" alternative will not treat any acres. Alternative B is 587,924 acres; Alternative C is 593,211 acres, Alternative D is 567,279, and Alternative E is 581,020 (Table 1). Throughout the project, archaeological site densities range from 1 to 66 sites per square mile per the 4FRI heritage site density model (see Gifford (2011) for a full explanation of how the model was developed). Within the analysis area there are 5,513 recorded archaeological sites with 123,716 acres on the Coconino and 214,485 acres on the Kaibab that have been previously surveyed for cultural resources (Table 2, Table 3).

Table 1. Proposed Acres by Alternative and by forest

Alternative	Forest	Proposed Acres	Forest	Proposed Acres	Total
B	Kaibab	231, 809	Coconino	356, 114	587, 923
C	Kaibab	232, 222	Coconino	360, 989	593, 211
D	Kaibab	231, 621	Coconino	335, 658	567, 279
E	Kaibab	299, 989	Coconino	351, 031	581, 020

Table 2. Kaibab National Forest Heritage sits and surveys.

Forest	Total Acres Previous Survey	Total Cultural Resources Recorded	National Register Listed	National Register Eligible	Unevaluated Sites	Sites Previously Evaluated Ineligible
Kaibab	214,485	2,840	15	257	2,388	180

Table 3. Coconino National Forest Heritage Sites and Surveys in project area.

Forest	Total Acres Previous Survey	Total Cultural Resources Recorded	National Register Listed	National Register Eligible	Unevaluated Sites	Sites Previously Evaluated Ineligible
Coconino	123,716	2,673	13	1,007	1,500	142

Long term timber management and grazing activities have been conducted within the 4FRI project area over the past 100 years. Historic activities such as skidding logs, temporary road construction and chaining have affected sites over that time span. Hunting and fuel wood gathering activities, which may include driving off existing roads, has also had some effects on cultural resources. Even with these effects from past activities, many sites still retain sufficient integrity to be considered eligible for the National Register of Historic Places.

Though prehistoric sites are likely to have been burned in the past (Covington et al. 1997), many prehistoric and historic archaeological sites are now under threat from unnatural high intensity wild fires due to increasing fuel loads in and around them. A low intensity burn across a site can clear light fuels and not adversely affect sites. However, high intensity fires can cause pueblo rock walls to spall and scorch rock art panels. Though there has been an increase in hazard fuels reduction projects on both Forests over the last decade, a large amount of the archaeological resources within the project area still have high levels of dead fuels growing in and around them (Crossley, Gifford, and Lyndon 2003, Coconino site records and Kaibab Annual Heritage Fire Report submitted to the SHPO). Heritage resources are also threatened by damage associated with fire suppression tactics like bulldozer constructed fire lines and safety zones. After a site has been intensely burned they are more exposed, consequently more vulnerable to vandalism and erosion.

As part of the Travel Management analysis, the Coconino and Kaibab identified and recommended road closures that are adversely affecting cultural resources. Many of these roads have not yet been physically closed to the public, leaving these cultural sites potentially vulnerable to continued affects from both intentional and opportunistic vandalism and soil erosion.

Habitat for some native plants desired by traditional collectors is also disappearing and natural springs are drying up due to various causes which may include climate change and overstocked forests. Plant collection areas and springs were used historically and still have cultural values that are important to the tribes. There are also dry ephemeral stream channels near to or in heritage sites that in some instances are damaging sites' stratigraphic integrity and eroding cultural materials. See Tribal Relations Specialist Report for more discussion.

Desired Conditions

Coconino: Existing and Proposed Forest Plan Direction

- Inventory, evaluate, nominate, protect study, interpret, and enhance cultural resources in accordance with management prescriptions.
- The recreational, educational, cultural, and scientific values of the archaeological sites on the Forest have been recognized as a recreational and scientific niche that the Forest can provide to the public. Promoting and developing that niche, while respecting those cultural and scientific values through research and conservation, is a goal of the heritage program of the Coconino National Forest (CNF).
- Achieve a balance between National Historic Preservation Act (NHPA) Section 106 activities (ensuring projects are in compliance with legal requirements to evaluate and protect archaeological sites) and NHPA Section 110 activities (actions focused on the cultural resources themselves). Study, document, and preserve sites as well as conduct a program of "public archaeology" to educate people about heritage through site interpretation and hands-on involvement in the archaeological process.

The current Coconino NF Forest Plan has some conflicting direction regarding managing significant, or potentially significant, inventoried sites. One standard directs management to **strive** to achieve a "No Effect" determination (USDA Forest Service 1978, p. 53). A second standard (which would be amended in this project) directs management to achieve a **"No Effect"** determination in consultation with the SHPO and the ACHP (36 CFR 800).

Amendment 3, of the current Forest Plan, is a specific, one-time variance for the Coconino NF restoration project. Amendment 3 revises the "No Effect" standard to clarify that significant or

potentially significant sites would be managed to achieve a no effect or no adverse effect determination whenever possible, and where adverse effects cannot be avoided, they would be minimized to the extent possible in consultation with the SHPO, the Advisory Council, tribes, and other consulting parties. Once the project is complete, current forest plan direction would apply to the project area. The language proposed does not apply to any other forest project. The amendments would be authorized per direction in the National Forest Management Act of 1976 (NFMA) and its implementing regulations found in 36 CFR 219 (1982).

Kaibab National Forest: Existing Plan Direction

- Cultural resources, including known traditional cultural properties, are preserved, protected, or restored.
- Historic artifacts are preserved in situ or, when necessary, curated following current standards.
- All historic properties are evaluated for their eligibility to the National Register and properties that are appropriate are listed to the National Register of Historic Places.
- Cultural resource findings will be synthesized and shared with the scientific community and public through formal presentations, publications, and educational venues.
- Public understanding about the cultural resources and historic preservation issues contribute to their protection.
- The Kaibab NF historic documents, including photographs, maps, journals, and Forest Service program management are available to the public for research and interpretation.
- For archaeological projects with the potential to address the culture history of area tribes, the Kaibab NF should ensure that such projects address topics of known importance to tribes.

Environmental Consequences

No Action Alternative (A)

Direct and Indirect Effects

Existing fuels in and around archaeological sites would continue to increase. This may result in more frequent and intense wildfires which could result in site and artifact damage such as spalling of rock art and cracking of artifacts as well as post fire erosion (Deal 1999, USDI 2004, Oster 2012). Fire suppression actions, particularly bulldozer operations, may also damage or destroy surface and subsurface archaeological sites resulting in the loss of those resources and their research potential. Additionally, sites are more visible after a fire, especially high intensity fires, and much more vulnerable to vandalism and erosion.

Soil erosion due to uncharacteristic wildfires could have both a direct and indirect effect on cultural resources. Rain and snow melt can cause channels to form within denuded sites, or mud slides from nearby slopes may deposit soil and debris within site boundaries leading to the loss of data potential and characteristics that make historic properties eligible for the National Register of Historic Places.

A “No Action” may result in the possible reduction over time of pre-European settlement adapted native plants. Some of which have been collected since historical times by American Indians for food and medicine. Additionally, springs and seeps are important locations to American Indians and other members of the public and increasingly overstocked forests may have some effect on those historic water sources.

Proposed Action Alternative (B)

Direct and Indirect Effects

Unnatural fuel loading should be reduced around National Register listed or eligible cultural resources. Uncharacteristic fire behavior should also be reduced. Thinning and low intensity prescribed fires can reduce current fuel loads which would then assist in preventing extensive heat damage during wildfires. There would be less need for fire suppression activities, consequently reducing the threat of ground disturbing activities like bulldozer fire-line construction.

Mechanical thinning treatments, temporary road construction and closures, skidding and other ground disturbing activities associated with 4FRI have the potential to affect cultural resources. Impacts can include rutting, erosion, dislocation or breakage of artifacts and features and destruction of sites and site stratigraphy. Prescribed burning also has the potential to affect fire sensitive sites. These potential effects are addressed through site avoidance strategies and implementing the site protection measures listed in Region 3 PA, PA Appendix J, and in the Heritage Strategy (Gifford 2011).

Initial reduction of heavy fuels may lead to an increase in site visibility, public visitation, and possible vandalism. Those issues are reduced through management actions that include project specific as well as long term monitoring. Initial entry prescribed burns are periodically revisited and burned to reduce natural fuel accumulation and archaeological site monitoring is part of that process. Possible road decommissioning can also assist in limiting access to some archaeological sites thus reducing post-burn visibility and visitation at those sites.

There is the possibility that cultural resources would be discovered during project implementation. Discovery guidance is found in PA Appendix J.

Alternative (C)

Direct and Indirect Effects

This alternative is focused on preserving an undisclosed numbers of trees 16" in diameter and larger. It is more of a socio-political concern to contemporary culture rather than an impact to historic properties. Many of the ground disturbing activities associated with this alternative are similar to those identified in Alternative B, and have the same potential to affect cultural resources. Key components of this alternative include additional mechanical and prescribed burning on specific grasslands; wildlife and watershed research and restoration as related to the Large Tree Retention Strategy (LTRS) identified by the 4FRI partnership. This alternative includes similar actions as Alternative B, with maintaining large trees and expanded grassland restoration as the primary differences.

One concern for heritage resources under this alternative is the increases in mechanical treatments. The Heritage Strategy does address this concern. For intensive ground disturbing activities, it requires a 100% archaeological survey for historic properties prior to project implementation, thus identifying cultural resources prior to ground disturbing actions. If additional high impact or intense mechanical treatments are needed under this alternative, additional archaeological survey would be necessary.

One potential benefit of this alternative is the preservation of culturally modified trees. The Heritage Strategy incorporates various levels of survey but not 100 % across the entire project area. Since sample surveys do not identify all historic resources, leaving a larger number of 16 inch and above trees in place may preserve some of these unrecorded culturally modified trees. Conversely, one negative aspect of leaving large trees in place was noted during the bark beetle infestation on the Coconino National Forest. During that period a number of larger ponderosa pines died in drier parts of the Forest. Some of those trees had taken root in archaeological sites. When these dead trees fell they uprooted portions of sites. Both of these examples are very limited in scale and would be minimized through implementing the 4FRI project. Landscape-level forest restoration can potentially decrease bark beetle impacts through a healthier forest and culturally modified trees on the Coconino and Kaibab National Forests occur primarily in aspen stands; not ponderosa pine, the focus of this project. So any effects under 4FRI are very limited.

Alternative (D)

Direct and Indirect Effects

Alternative D focuses on reducing prescribed burning by over 50 percent across the project in comparison to the proposed action (B). The alternative was developed in response to social concerns regarding smoke impacts in and around the area. Actions under Alternative D are similar to those found in the proposed action (Alternative B) with the principle difference being decreases in levels of prescribed burning and other options to remove thinning debris. Potential impacts to cultural resources are similar to Alternative B. The Heritage Strategy is flexible enough to respond to all of the various levels of implementation under Alternatives B, C and D.

Alternative D may benefit some fire sensitive cultural resources in areas of the Forest with lower site densities. Per the Heritage Strategy (Gifford 2011), burn units with high site densities are surveyed at 100 %. In areas of low density, the Heritage Strategy option is to survey an additional 25% if necessary. Current Forest data, along with the 4FRI site density models and local heritage personnel's resource knowledge, will be used to identify and protect the majority of fire sensitive sites found in both high and low density areas. Nonetheless, there is always the

possibility that small numbers of these fire sensitive sites could be affected and a reduction in prescribed burning may assist in preserving them.

The proposed reduction in burning under this alternative addresses those concerns. Also see Environmental Justice in the Economics Report for potential impacts to tribes.

A 50% reduction of prescribed burning leaves a significant amount of post thinning debris and slash on the forests. Without prescribed burning, actions identified in the alternative such as chipping, shredding, mastication and off-site removal of material would be required. Some of these activities may include ground disturbing actions that could have an effect on cultural resources. Forest and district archaeological staff can address these effects by increasing the amount of archaeological survey within the area of these ground disturbing activities and ensuring that cultural resources are avoided or the adverse effects are mitigated.

Alternative (E)

Direct and Indirect Effects

This alternative is similar to Alternative C in the amount of mechanical and burn treatment areas proposed, additional acres of grassland treatments on the Kaibab NF, and the incorporation of wildlife and watershed research on both Forests. It proposes mechanically treating trees up to 9-inch diameter at breast height (dbh) in 18 Mountain Spotted Owl Protected Activity Center (MSO PACs) and includes low-severity prescribed fire within 70 MSO PACs, excluding 54 core areas.

As in Alternative C, the primary concern will be the increase in areas proposed for mechanical treatment. The Heritage Strategy does address this concern and was designed to achieve a No Adverse Effect determination pursuant to the PA. It requires that areas planned to have intensive ground disturbing activities are inventoried for historic properties at 100 % prior to implementation. If additional high impact or intense mechanical treatments are needed under this alternative, additional archaeological surveys would be necessary.

Because sample surveys do not identify all historic resources, the increase in survey coverage on the Coconino National Forest will result in a major decrease in the potential to adversely impact cultural resources. However, the majority of the treatment areas are within the ponderosa pine eco-zone, an area that has been found to generally have a low occurrence of historic properties.

Another potential benefit of this alternative is the preservation of culturally modified trees. The Heritage Strategy, incorporates various levels of survey but not 100% across the entire project area. This alternative will leave a large number of 9 in. and above trees in place, thus may preserve some of these unrecorded culturally modified trees. Conversely, one negative aspect of leaving large trees in place was noted during the bark beetle infestation on the Coconino National Forest. During that period a number of larger ponderosa pines died in drier parts of the Forest. Some of those trees had taken root in archaeological sites. When these dead trees fell they uprooted portions of sites. Both of these examples are very limited in scale and would be minimized through implementing the 4FRI project. Landscape-level forest restoration can potentially decrease bark beetle impacts through a healthier forest and culturally modified trees on the Coconino and Kaibab National Forests occur primarily in aspen stands; not ponderosa pine, the focus of this project. So any effects under 4FRI are very limited.

Under this alternative, no Forest Plan amendments are proposed. Without a Forest Plan amendment that revises the current “no effect” standard (USDA Forest Service 1978, p. 53) to “no adverse effect,” 100% of the APE would need to be surveyed and all sites avoided. If all areas cannot be surveyed, and/or all sites cannot be avoided, this alternative would not be

consistent with the existing Forest Plan.

Also see Environmental Justice in the Economics and Tribal Relations Specialist Reports for potential impacts to Tribes.

Cumulative Effects

The spatial scale for cumulative effects is the area of potential effect. Past, present, and foreseeable projects in appendix F of the FEIS were reviewed and used for the analysis. Therefore, the temporal timeframe is about 10 years.

Alternative (A) - No Action

Under the no action alternative, the forest plans would continue to be implemented. The proposed large scale, landscape level forest health project does not occur, and there will be no additional effects as a result of this project. The present and foreseeable future undertakings will continue to have the potential to affect cultural resources. These undertakings will go through the Section 106 review process and all cultural resources that are listed on the National Register or eligible for the Register will be avoided or the adverse effects will be mitigated. Any cumulative effects to cultural resources that could occur would therefore be considered to result in a No Adverse Effect determination.

Alternative (B) – Proposed Action

Alternative B has the potential to increase the amount of ground-disturbing activities, including mechanical treatments, temporary road construction, skidding, stream restoration, fence construction and other ground disturbing activities. When considered together with the past present and foreseeable future actions, these activities have the potential to affect cultural resources. All undertakings that have the potential to affect cultural resources will go through the Section 106 review process, however, and all cultural resources that are listed on the National Register or eligible for the Register will be avoided or the adverse effects will be mitigated. In addition, protection measures including archaeological monitors during mechanical activities, keeping ground disturbing activities out of site boundaries by flagging and avoiding sites, and post prescribed burn site monitoring to assess the effects of the low intensity burns, will help to minimize the effects. The potential cumulative effects to cultural resources from increased ground disturbing activities and prescribed burning resulting from this alternative would therefore be considered to result in a No Adverse Effect determination.

There is a possibility for an increase in archaeological site vandalism resulting from increased visibility once the project is implemented. This visibility will be greater than that caused by past, present or foreseeable future undertakings in the area because more surface vegetation cover would be removed than ever before. However, the management practice of implementing low to moderate intensity prescribed fire typically does not sterilize soil or completely remove ground fuels like a high intensity uncontrolled wildfire. Low intensity fires also tend to leave some trees in place that would eventually cover the surface with a recurring needle cast. Sites are periodically monitored both during project implementation as well as for NHPA Section 110 purposes by agency and volunteer personnel. Proposed road closures would reduce access to some of these areas as well, reducing the potential for increased vandalism. The cumulative effect of increased visibility resulting from this alternative would therefore be considered to result in a No Adverse Effect determination.

The cumulative effects on cultural resources resulting from any potential increase in erosion are

also minimal. Reducing fuel loads and implementing low to moderate intensity prescribed fires does not cause soil sterilization or hydrophobic soils as high intensity wildfires do. As noted previously, low intensity prescribed fires leave some vegetation in place and revegetation occurs soon afterwards if soils are not sterilized. However, as implementation occurs, archaeologists would monitor for erosion concerns by examining sites in the project areas, focused on slopes, drainages, and other high probability areas with cultural resources present. The cumulative effects to cultural resources caused by an increase in erosion resulting from this alternative would therefore be considered to result in a No Adverse Effect determination.

Alternative (C) – Preferred Alternative

The addition of the Large Tree Implementation Plan in this alternative would have little additional effect on cultural resources. However, an increase in prescribed burning, as well as similar actions identified under Alternative B, such as mechanical treatments, prescribed burning, stream restoration and fence construction with mechanical clearing have the potential to affect cultural resources. Hand construction of fences, however, may or may not be subject to consultation as determined by the Forest Archaeologist in the Region 3 Programmatic Agreement (Appendix A, Section III of the PA). These issues are identified under the Cumulative Effects section under Alternative B and not repeated here. As noted previously, all undertakings that have the potential to affect cultural resources will go through the Section 106 process and all cultural resources that are listed on the National Register or eligible for the Register will be avoided or the adverse effects will be mitigated. An increase in these types of activities will not result in an adverse effect to cultural resources as long as the projects comply with Section 106.

Alternative (D)

As with Alternatives B and C, similar increases in activities under Alternative D such as mechanical treatments and ground disturbances can add to the effects on cultural resources. Additionally, specific to this alternative, is a reduction in prescribed burning which may involve other means of slash and debris removal. Actions such as chipping, shredding and mastication as well as removal of material off-site may include an increase in ground disturbing actions. As noted above, all undertakings that have the potential to affect cultural resources will go through the Section 106 process and all cultural resources that are listed on the National Register or eligible for the Register will be avoided or the adverse effects will be mitigated. Overall, the cumulative effects on cultural resources as a result of Alternative D resulting from this alternative would therefore be considered to result in a No Adverse Effect determination.

Alternative (E)

The addition of the large tree implementation plan in this alternative would have little additional effect on cultural resources. As with Alternatives B and C, similar increases in activities under Alternative D, such as mechanical treatments and ground disturbances, can add to the effects on cultural resources. Alternative E may also increase ground disturbance in that it adds acres of grassland treatments on the Kaibab National Forest and incorporates wildlife and watershed research on both Forests that could cause additional ground disturbances through actions such as mechanical thinning, chipping, shredding and mastication as well as removal of material off-site. Under this alternative, no Forest Plan mendments are proposed which could result in 100% of the APE being surveyed and all sites avoided in order to achieve a “no effect” determination as called for in the Forest Plan, which would reduce the effects of this undertaking on cultural resurces. As noted above, on both the Kaibab and the Coconino National Forests, all undertakings that have the potential to affect cultural resources will go through the Section 106

process and all cultural resources that are listed on the National Register or eligible for the Register will be avoided mitigation measures that are likely to be implemented will focus on limiting the amount of potential adverse effects to Heritage Properties. Overall, the cumulative effects on cultural resources as a result of Alternative E are considered to result in a No Adverse Effect determination.

Mitigation Measures

These are generally accepted measures that have already been consulted on with the SHPO and the tribes (Table 4). Specific mitigation measures will be devised during the heritage analysis and tribal consultation for each individual task order.

Table 4. Mitigation measures.

Potential effects to heritage resources would be addressed through site avoidance strategies and implementing site protection measures listed in the PA Appendix J, and in the 4FRI heritage strategy and the Heritage Specialist report, or developed in consultation with the SHPO	Regulatory requirement. Compliance with NHPA and Southwestern Region PA with the SHPO.
Where adverse effects to historic properties cannot be avoided, develop mitigation measures in consultation with the SHPO, the Advisory Council, and Native Americans in compliance with NHPA, AIRFA, EO 13007, EO 13175, and other applicable Executive Orders, legislation, rules, and policies.	Regulatory requirement. Compliance with NHPA and Southwestern Region PA with the SHPO.
Monitoring during and after project implementation would occur in accordance with the PA and the PA Appendix J to document site protection and condition. Also see FE5.	Forest plan compliance.
See Recreation and Scenery RS3 and RS5 for mitigation related to historic roads and trails.	Forest plan compliance.
Prior to initiating and during the heritage analysis for -specific task orders, the Forests would consult with federally recognized tribes to identify traditional use areas and, if necessary, develop project-specific mitigation measures to accommodate traditional use of the forest by tribal members.	Regulatory requirement. Compliance with NHPA and the PA. Forest plan compliance.
Fuels and other treatment timing would be adjusted as possible to avoid seasonal plant gathering and ceremonial use.	Forest Plan compliance
See FE 5	
In accordance with regulations (43 CFR 10) governing application of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (25 U.S.C. 3001 *et seq.*) if human remains, funerary objects, sacred objects, or objects of cultural patrimony are inadvertently encountered, operations in the area must immediately cease and the Forest Archaeologist notified. The Forest Archaeologist will work to initiate consultation with the affected tribe (s) to implement any requirements listed in NAGPRA and the PA and develop a plan to mitigate for the effects to the find.	Regulatory requirement
Should any previously unidentified cultural materials be discovered during project implementation, work must cease immediately and the Forest Archaeologist must be contacted to initiate the consultation process as outlined in the Advisory Council on Historic Preservation Regulations (36 CFR Part 800.13).	Regulatory requirement

Forest Plan Consistency

The Coconino NF Forest Plan as written has some conflicting direction regarding managing significant, or potentially significant, inventoried sites. One standard directs management to **strive** to achieve a "No Effect" determination (USDA Forest Service 1978, p. 53). A second standard directs management to achieve a **"No Effect"** determination in consultation with SHPO and ACHP (36 CFR 800). An amendment is proposed to remove the inconsistencies between the standards in alternatives B, C, and D. Amendment 3 is a specific, one-time variance for the Coconino NF restoration project. Amendment 3 revises the "No Effect" standard to clarify that significant or potentially significant sites would be managed to achieve a no effect or no adverse effect determination whenever possible, and where adverse effects cannot be avoided, they would be minimized to the extent possible in consultation with the SHPO, Advisory Council, tribes, and other consulting parties. Once the project is complete, current forest plan direction would apply to the project area. The language proposed does not apply to any other forest project. The amendments would be authorized per direction in the National Forest Management Act of 1976 (NFMA) and its implementing regulations found in 36 CFR 219 (1982).

Direction for heritage resources was evaluated for both the Coconino and Kaibab NF (heritage report, table 5). With forest plan amendment #3, the project is consistent with the Coconino NF forest plan because heritage routinely inventories and evaluates sites for all projects. The project is consistent with Kaibab NF forest plan desired conditions for heritage resources because cultural resources, including known traditional cultural properties would be preserved, protected, or restored. All historic properties would be evaluated for their eligibility to the National Register of Historic Places. The 4FRI Heritage Strategy uses Region 3 PA, Appendix J, and a forest Heritage site density model to inform the process for compliance with Section 106 of the NHPA (National Historic Preservation Act) within the individual treatment areas (Gifford 2011). All forest plan standards have been incorporated into the project. Special features such as the General Crook National Historic Trail and the Bill Williams Traditional Cultural Property would be protected.

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Appendix A – Existing and Draft Forest Plan Crosswalk

Table 5. Existing and Draft Forest PLan crosswalk for Heritage resources - Coconino National Forest.

Current Plan DC (Goals)	Current Plan Management Direction	Draft Plan Management Direction	Consistent? Why or Why Not?
Coconino National Forest			
Outdoor Recreation: Inventory, evaluate, nominate, protect, study, interpret, and enhance cultural resources in accordance with the management prescriptions (Coconino National Forest Plan – Amendment No. 9 – 12/92 Replacement Page 22).	.	Goal: The recreational, educational, cultural, and scientific values of the archaeological sites on the Forest have been recognized as a recreational and scientific niche that the Forest can provide to the public. Promoting and developing that niche, while respecting those cultural and scientific values through research and conservation, is a goal of the heritage program of the CNF (Coconino National Forest Draft Land Management Plan – February 2011, p. 68).	Consistent: Heritage routinely inventories and evaluates sites for all projects. 4FRI Heritage Strategy uses the PA Appendix J, the 4FRI site density model, and up to 25% additional survey if needed in low site density areas (Gifford 2011).
	Coordinating Requirements for Cultural Resources: ● A complete or sample cultural resources survey is done on project undertakings. Intensity of sampling is determined by using FSM 2360. ● Ground disturbing projects receive cultural resources clearance. This includes projects proposed in areas that have been previously cleared for other projects. Projects, not areas, receive clearance. Projects receive clearance without additional archaeological field work whenever sufficient prior field work has been done to clear the project. ● Cultural resources reports are reviewed by the Forest Archaeologist who also determines site significance and	Management Approaches (MA) for Heritage Site Conservation and Evaluation: Achieve a balance between NHPA Section 106 activities (ensuring projects are in compliance with legal requirements to evaluate and protect archaeological sites) and NHPA Section 110 activities (actions focused on the cultural resources themselves). Studying, documenting, and preserving sites as well as conducting a program of "public archaeology" to educate people about heritage through site interpretation and hands-on involvement in the archaeological process (Coconino National Forest	Consistent: Survey strategy and site nomination/eligibility are addressed under 4FRI. ● N/A for Sec. 110 activities under 4FRI. ● 4FRI survey strategy would be completed prior to undertakings. May revise as needed. ● Eligible cultural resource sites would be protected from project activities under 4FRI.

Current Plan DC (Goals)	Current Plan Management Direction	Draft Plan Management Direction	Consistent? Why or Why Not?
	recommends, through the Forest Supervisor, nominations of sites to the National Register of Historic Places, as prescibed in FSM 2360 and in consultation with the SHPO. ● Pertinent reports and documentations are completed before cultural resource clearance is granted and projects proceed, unless otherwise agree to with the SHPO and, if necessary, the ACHP. ● Any area, even those that have been inventoried at a 100 percent level, may have cultural resource sites present that have not been identified or marked. Project administrators and operators are alert for such sites. It is the project administrator's responsibility to mark, protect, and report such unreported sites. ● Cultural resource sites are located and protected from project activities according to direction in FSM 2360 and 2430. ● Unauthorized disturbance of cultural resource sites is handled according to appropriate laws and FSM direction (Coconino National Forest Plan – Amendment No. 1 – 12/87 Replacement Pages 49, 50).	Draft Land Management Plan – February 2011:69).	
	Standard: The Forest complies with the NHPA and R-3 PA in decisions involving interactions between cultural and other resources. Cultural resources are managed in coordination with the SHPO. Until evaluated, the minimal level of management for all sites is avoidance and protection (Coconino National Forest Plan Amendment No. 18 – 1/2004 replacement page 52).		Consistent: Standard for all projects including 4FRI.
	Standard:		Not Consistent under

Current Plan DC (Goals)	Current Plan Management Direction	Draft Plan Management Direction	Consistent? Why or Why Not?
	Significant, or potentially significant, inventoried sites are managed to achieve a "No Effect" determination, in consultation with the SHPO and ACHP (36 CFR 800) (Coconino National Forest Plan, page 53). ● Management strives to achieve a "No Effect" determination (Coconino National Forest Plan p. 53). ● When sample surveys, rather than 100 percent survey coverage, are done for project clearances, survey locations and sample intensity are based on areas of greatest project impact, likely locations for cultural resource sites based on archaeological experience, land management planning, dispersion of sample coverage, certain topographic features specified in the Save the Jemez lawsuit settlement agreement, and likely areas based on the Forest site density predictions. Identified sites are evaluated for their National Register eligibility when they are severely damaged, when they would be impacted by an undertaking, or information about the uniqueness, commonness, and characteristics of their site class are sufficiently known to make an informed decision. Sites for which determinations of eligibility have not been made are managed as if they are eligible, unless consultation with the SHPO indicates otherwise (Coconino National Forest Plan Amendment No. 9 – 12/92, new page 52-1).		old plan: Under 4FRI a determination of No Adverse Effect is recommended. Although the Current Plan calls for "No Effect" determinations, in fact, all fuels projects for the past ten years have been No Adverse Effect determinations. Amendment 3 to the Revised Forest Plan has been proposed to revise this out-of-date standard to the current "No Adverse Effect determination" that is actually in use. All unevaluated sites are managed as eligible and would be done so under 4FRI.
	General Crook National Historic Trail: Standard:		Consistent: Would be protected

Current Plan DC (Goals)	Current Plan Management Direction	Draft Plan Management Direction	Consistent? Why or Why Not?
	Use of motorized vehicles, except vehicles designed to travel over-the-snow, such as snowmobiles, on any portion of the route not already designated and designed for general vehicle travel is prohibited (Coconino National Forest Plan, p. 55).		during implementation at the district level during 4FRI as task orders are identified.
	General Crook National Historic Trail Standard: Manage resource activities to meet Visual Quality Objective (VQO) of foreground retention, considering the historic qualities of the characteristic landscape (Coconino National Forest Plan, p. 55).	Desired Conditions for General Crook National Recreation Trail: The historic route and associated values are preserved. Foot and horse travel are the emphasized recreation activities on the Trail. Standards for General Crook National Recreation Trail: Protect General Crook National Recreation Trail chevrons and route markers and historic mile post markers. Management Approaches (MA) for General Crook National Recreation Trail: Manage the 138-mile General Crook Trail corridor on National Forest Land from Fort Whipple to Fort Apache and associated historic sites and side trails for potential Congressional designation as a National Historic Trail (Coconino National Forest Draft Land Management Plan – February 2011, p. 114).	Consistent: Would be protected during implementation at the district level during 4FRI as task orders are identified.
	MA 37: Changes in management can occur in response to demonstrated (through monitoring) negative impacts to archeological resources.		Consistent: Adaptive management is identified in the 4FRI, Section 106, NHPA compliance document.

Table 6. Forest Plan direction - Kaibab National Forest.

Kaibab National Forest		
Current Plan DC (Goals)	**Current Plan Management Direction**	**Consistent? Why or Why Not?**
Cultural Resources, including known Traditional Cultural Properties, are preserved, protected, restored	No specific stand alone goals – goals are expressed as desired conditions	Consistent: Measures would be taken to protect Heritage Properties that have the potential to be threatened by activities listed in task orders.
Historic artifacts are preserved in situ or, when necessary, curated following current standards.		Consistent: Kaibab Heritage policy is to leave artifacts in place whenever possible. If artifacts are collected they would be curated in a secure location.
All historic properties are evaluated for their eligibility to the National Register and properties that are appropriate are listed to the National Register of Historic Places.		Consistent: Sites would be evaluated, unevaluated sites are treated as eligible for project purposes
Cultural resource findings will be synthesized and shared with the scientific community and public through formal presentations, publications, and educational venues.		
Public understanding about the cultural resources and historic preservation issues contribute to their protection.		
The Kaibab NF historic documents, including photographs, maps, journals, and Forest Service program management are available to the public for research and interpretation.		
GL: The Kaibab NF should ensure that topics of known importance to tribes associated with the Forest should be addressed by archaeological projects that have potential to address the cultural history		Consistent: Will be addresses during tribal consultation on individual task orders

of the area.		
	Traditional Cultural Properties	
DC: Traditional practitioners have access to TCPs for ceremonial use and privacy to conduct ceremonies.	Addresses mitigation measure to insure access to traditional collection and ceremonial use area during implementation.	
DC: TCPs are preserved, protected, or restored for their cultural importance and are generally free of impacts from other uses.	In order to achieve and maintain the desired conditions for TCPs, the Kaibab NF continues to identify, evaluate, and protect TCPs and work with associated communities to collaboratively manage TCPs by developing programmatic agreements, management plans, memoranda of understanding, or other management tools.	Consistent: Required by Law
DC: The significant visual qualities of TCPs are preserved consistent with the TCP eligibility determination.		Consistent: Required under Section 106 of the NHPA
DC: Traditional use of TCPs by the associated cultural groups is accommodated.	The Kaibab NF accommodates and facilitates traditional use of TCPs and other culturally important places (such as trails and springs) that are essential to maintaining the continuing cultural identity of associated communities.	
DC: Confidential and/or sensitive information regarding TCPs is protected.		Consistent: Required by Law
GL: Development of new facilities and commercial and recreational activities should be minimized in TCPs.		
GL: Consultation with federally recognized tribes should be conducted for all proposed special use permits within TCPs.		

Appendix B - The 4FRI Heritage Survey Strategy - 4FRI First EIS: Coconino and Kaibab National Forests

SHPO-2011-0144 (91485)

REPORT NO.: CNF: 2011-12-A
KNF: 2011-15-A

INVENTORY STANDARDS AND ACCOUNTING
(Reference: FSM 2361)

1. REPORT NUMBER:	2. REPORT DATE:	3. ROUTING: Copies to
YEAR FOREST NUMBER SERIES CNF: 2011 04 12-A KNF: ~~2011~~ ~~04~~ 15-A 2011 15	MONTH DAY YEAR April 15, 2011	X SHPO X 4FRI NEPA, Paula Cote X Coconino Heritage, Peter Pilles, X Kaibab Heritage, Margaret Hangan, __ Site Files

4. AUTHOR(S): A. Gifford, David J.

RECEIVED

5. PROJECT NAME/REPORT TITLE (Abbreviate if necessary):

Four Forest Restoration Initiative (4FRI)
First EIS, Coconino and Kaibab National Forests

MAY 09 2011
ARIZONA STATE PARKS/SHPO

6. ABSTRACT/SUMMARY of report and findings: *See continuation page*

7. CONSULTATION/CLEARANCE
A. CONDITIONS OF CLEARANCE: ____ NONE (No poten. eligible sites in project area)
____ AVOID sites specified ____ MONITOR sites specified below
____ REPORT new sites to Forest Archaeologist _X_ OTHER/ADDITIONAL COMMENTS

Report and IS&A completed for NEPA/NHPA decision purposes. Additional project- specific reports with detailed information for each task order will be completed as projects are implemented over the life of the project.

B. ____ ADDITIONAL FIELD WORK REQUIRED ____ EVALUATE SITES SPECIFIED BELOW ____ OTHER

C. REPORT ACCEPTED: _X_ YES ____ NO
D. CLEARANCE RECOMMENDED: _X_ YES ____ NO __ N/A

[signature] May 2, 2011
CNF FOREST ARCHAEOLOGIST DATE

[signature] May 4, 2011
KNF FOREST ARCHAEOLOGIST DATE

E. EFFECT ON CULTURAL RESOURCES: __No Effect _X_ No Adverse ____ Adverse ____ N/A ____ Beneficial

F. TRANSMITTAL TO SHPO: Consultation for:
_X_ Effect ____ Eligibility ____ Info Only
____ N/A, as per PMOA

[signature] 05-2-2011
CNF FOREST SUPERVISOR DATE

[signature] 5/4/2011
For KNF FOREST SUPERVISOR DATE

G. SHPO CONCURRENCE: X YES ___ YES, per comment below
____ NO Comments: (____ Additional comments attached)

[signature] 5/23/2011
For SHPO DATE

H. CLEARANCE APPROVED: X YES ____ NO

[signature] 31 May '11
CNF FOREST SUPERVISOR DATE

[signature] 5/25/2011
For KNF FOREST SUPERVISOR DATE

Previous edition is obsolete (rev: May 3, 1999; rev:10/4/04 by CNF) (OVER) R3-FS-2300-4a (Interim)

8. **RANGER DISTRICT**: Coconino and Kaibab NF
Flagstaff , Williams, and Tusayan Districts

9. **PROJECT FUNCTION**: 24

10. **PRIMARY ACTIVITY TYPE**: E

11. **SECONDARY ACTIVITY TYPE**: __

12. **PROGRAMING**: P

13. **TOTAL PROJECT ACREAGE**: 1,347,338
(Round to nearest 1/10th Acre)

14. **ACREAGE NEWLY SURVEYED**: N/A

15. **SAMPLE**: ca. 43 %

16. **ACREAGE RESURVEYED**: N/A

ACREAGE PREVIOUSLY SURVEYED N/A

17. **TOTAL NO. SITES IN PROJECT AREA** 7, 209

18. **NEW SITES** N/A

19. **SITES EVAL. ELIG.**: N/A

20. **SITES EVAL. NOT ELIG.**: N/A

Site No's:

21. **SITES INSPECTED, MONITORED, ENHANCED, ETC.**: N/A
(Projects other than survey, evaluation)
Site No's:

22. **RECOMMENDED DETERMINATION OF EFFECT**: 2 Initial: (*DJG/PJP/MH*)
(By USFS Professional CRM Specialist)
1. *No Effect*
2. *No Adverse Effect*
3. *Adverse Effect*
4. *Not Applicable: Not an Undertaking*
5. *Beneficial Effect*
6. *Not Applicable: No Cultural Resources Present*

23. **PROJECT LOCATION**: *(Optional)*

T. N. R. E. Sec.
T. N R E Sec.
T. N R. E Sec.
T. N R. E Sec.

24. **INSTITUTION CONDUCT. PROJ./SURVEY**:
Coconino/Kaibab National Forests FA

25. **AVERAGE NUMBER INDIVIDUALS USED**: 2

26. **AVERAGE INDIVIDUAL/ TRANSECT SPACING**: (Feet) N/A
(Round to nearest whole hour)

27. **FIELD HOURS**: N/A

28. **LAB HOURS**: N/A

29. **TRAVEL HOURS**: N/A

30 **ADMIN. HOURS**: 496
(RD: 96 SO: 400)

31. **MILEAGE**: N/A

32. **PER DIEM RATE**: N/A

33. **DAYS OF PER DIEM**: N/A

34. **COST WEIGHT FACTOR**: 9

35. **COST (CODE)**: D

36. **ACTUAL COST** $ 13, 729

Value of Volunteer Work: $ N/A

Cost/Acres Surveyed *(Box 36/Box 14+Box 16)* $ N/A
Cost/Acre Cleared: *(Box 13/Box 36)* $ N/A

37. REMARKS/CONTINUATION

The Four Forest Restoration Initiative (4FRI) is a landscape level forest health and restoration project that will treat overstocked ponderosa pine forests on the Coconino, Kaibab, Tonto, and Apache-Sitgreaves National Forests. Restoration work will include mechanical and hand thinning, prescribed fire, temporay road construction and closures, stream channel repair, and fenced enclosures. This report focuses on the first Environmental Impact Statement (EIS) for the Coconino and Kaibab National Forests.

The Heritage strategy for the project involves three components under a phased approach covering 10 to 20 years of implementation. The first component is the implementation of the Region 3 Programmatic Agreement, Appendix J. Appendix J is a previously developed document that addresses Large Scale Fuels Reduction, Vegetation Treatment, and Habitat Improvement Projects. This agreement identifies Heritage processes for large scale vegetation projects that include 100% survey in high site density areas and intensive ground disturbing actions.

The second aspect of the Heritage plan is the archaeological site density model. It was developed using high and low site densities based on Appendix J criteria. Determining site densities, along with local archaeological management expertise, will assist in identifying the amount of survey needed in low site density areas for each task order during implementation.

The third componenet of the 4FRI Heritage plan is the sample survey strategy. This approach was agreed to by archaeologists on the Kaibab N.F., the Coconino N.F., and the USFS Southwest Regional Office, as well as Coconino and Kaibab N.F. leadership, and will only be used in low site density areas. For each task order with low site densities or plans for prescribed burning, an additional survey of up to 25% of the project unit can be completed, if necessary. This additional 25% survey is based on three components:

Task orders are expected to be approximately 5,000 - 10,000 acres in size. The sample strategy is to survey Appendix J required areas first -100% survey of intensive ground disturbing project activities such as temporary roads and landings. Following that, springs, certain features indicated on historic period maps, other likely site situations, and areas of tribal concerns will be examined. After these primary target areas are examined, the project archaeologist may use the remaining amount of the additional 25% survey to fill in gaps, look at areas of interest, validate model accuracy, or do no additional survey.

The Heritage program manager may also elect to do no additional survey in a task order if intensive ground disturbance is not anticipated and adequate survey already exists. Conversely, Heritage program managers may feel the need to do additional survey for a specific task order. They are free to discuss this with their line officers and develop a new survey strategy for that situation.

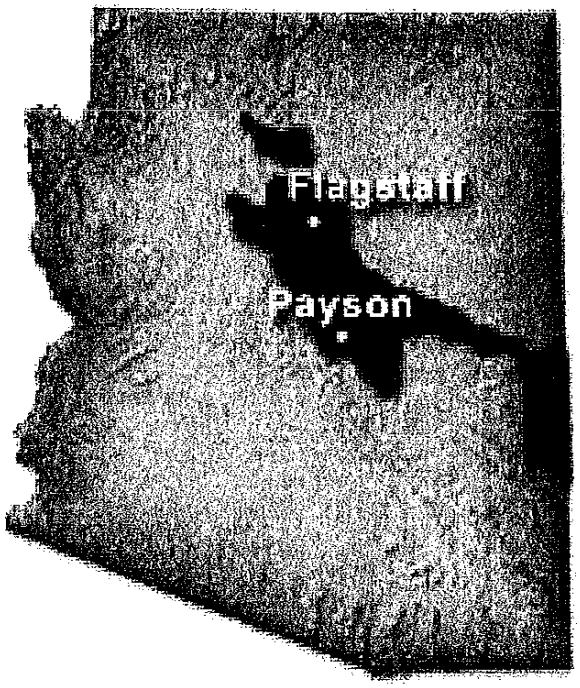
All National Register eligible or unevaluated historic properties will be protected as required by Appendix J of the Region 3 Heritage Programmatic Agreement.

CNF Report 2011-03-04-12
KNF Report 2011-03-07-15

Four Forest Restoration Initiative (4FRI)
Heritage Resources Strategy and NHPA Compliance

David J. Gifford
4FRI Archaeologist

April 15, 2011



With Contributions from
Neil Weintraub & Chris Barrett

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Abstract

The Four Forest Restoration Initiative (4FRI) is a landscape level project designed to restore ecological resilience and natural fire behavior across 2.4 million acres of ponderosa pine forest on the Kaibab, Coconino, Tonto and Apache/Sitgreaves National Forests. The project is a collaborative effort involving a diverse group of stakeholders including local, county and state governments as well as organizations, institutions, environmental groups and industry. The 2.4 million acres will be segmented into two or three analysis areas under the National Environmental Policy Act (NEPA). This first analysis will focus on the Kaibab and Coconino National Forests.

The objective of this initiative is to restore forest structure, pattern and composition which will lead to increased forest resiliency and function. Resiliency increases the ability of the ponderosa pine forest to survive natural disturbances such as insects, fire, disease and climate change. The project is expected to put the analysis area on a trajectory towards comprehensive, landscape-scale restoration with benefits that include improved vegetation biodiversity, wildlife habitat, soil productivity, watershed function, heritage site protection and the opportunity for the safe use of managed fires.

The Proposed Action for the first Environmental Impacts Statement (EIS) on the Coconino and Kaibab National Forests consists of restoration activities within 750,000 acres of ponderosa pine ecosystem over approximately 10 years. Treatment s are proposed for the Williams and Tusayan Ranger Districts on the Kaibab National Forest, and the Flagstaff Ranger District with small portions of the Mogollon and Red Rock Ranger Districts on the Coconino National Forest.

This report outlines the Heritage Strategy for the 4FRI project on the Coconino and Kaibab National Forests. In the past, heritage inventories were completed prior to the NEPA analysis. However, for the 4FRI project the process has been somewhat reversed largely due to the size of the undertaking and the phased nature over ten years. This report identifies the large-scale survey strategy proposed for the project area as well as a long-term process to ensure National Register eligible-heritage resources are protected, and that the Section 106 requirements of the National Historic Preservation Act are followed. The Region 3 Programmatic Agreement, Appendix J (Appendix J) will be used to develop a large-scale consistent strategy across the Forests while allowing flexibility at the local unit level for implementation and adaptive management strategies.

The 4FRI Heritage Strategy includes provisions to survey to current standards, and Forest Archaeologists can determine strategies in previously disturbed areas. For example, hand thinning areas may or may not need to be surveyed and burn only unit surveys will be focused in areas likely to contain fire-sensitive sites. One hundred percent survey will be conducted in high site density locations per the density model and in areas of intensive ground disturbance. For locations of the project that are defined as low site density, new survey of up to twenty-five percent can be implemented, targeting areas of concern. These may include but are not limited to heavy ground disturbance areas, water sources, or areas identified by Native American concerns or from historic records and maps.

Introduction

The Four Forest Restoration Initiative (4FRI) is a landscape-level initiative designed to restore ecological resilience and natural fire behavior across 2.4 million acres on the Kaibab, Coconino, Tonto and Apache/Sitgreaves National Forests. This project is a collaborative effort comprised of a diverse group of stakeholders that includes members of local, county and state governments; organizations; institutions; environmental groups and industry representatives. The 2.4 million proposed acres will be segmented into two or three study areas that will be analyzed under the National Environmental Policy Act (NEPA). The first analysis will focus on the Kaibab and Coconino National Forests, with the second and third analysis areas to be determined.

Figure 1: Example of forest before restoration treatment

Figure 2: Example of forest after restoration treatment

In 2010, the Southwest Region of the Forest Service completed the Appendix J, Standard Consultation Protocol for Large-Scale Fuels Reduction, Vegetation Treatment, and Habitat Improvement Projects of the Region 3 Heritage First Amended Programmatic Agreement (USDA 2010). Appendix J was developed to replace the Region's Wildland Urban Interface Programmatic Agreement and was expanded to incorporate large-scale vegetation treatment projects that include prescribed fire and mechanical treatments. See Appendix A of this report for the full text of that document.

This document and Appendix J identify how treatments proposed for the first 4FRI analysis will comply with Section 106 of the National Historic Preservation Act (NHPA). Proposed treatments under 4FRI will include forest thinning and prescribed burning along with road work, stream channel restoration and aspen regeneration. The intent of this document is to lay out a multiple-forest plan to identify survey strategies, implementation procedures and effects analysis to minimize or mitigate potential effects to heritage resources while ensuring that individual forests have the ability to incorporate local processes to address specific concerns.

Proposed Action (Undertaking)

In response to the need for ponderosa pine ecosystem restoration, the Coconino and Kaibab National Forests have developed a proposed action to conduct restoration activities throughout approximately 750,000 acres of ponderosa pine over a 10 year period. Currently, the proposed action is in draft form; through on-going public meetings and comments it may be refined. Major changes are not anticipated; however, if significant alterations are made an addendum NHPA section 106 report for heritage resources will be submitted for consultation.

Proposed Action Activities:
Trees will be cut using a range of treatment methods that include group selection and intermediate and pre-commercial thinning. Treatments will focus on the most abundant tree size classes in order to achieve and/or set the analysis area on the trajectory to attain greater diversity (heterogeneity) in spatial patterns and size class distribution. Treatments will be designed to manage for old age trees in order to sustain as much old forest structure as possible across the landscape. Strategically placed treatments will be designed to create tree groups and clumps that stimulate grass, forbs and individual tree growth. The strategic placement of treatments will maximize the ability to reduce fire risk. Trees will be mechanically cut and then piled, burned, lopped and scattered or removed.

Trees will be cut using methods that promote and stimulate the growth of Gambel oak and aspen in order to improve vegetation diversity and wildlife habitat. Protective measures (such as fencing or tree felling) will be used to protect aspen from ungulate use during critical growth periods.

Trees that have encroached on grassland (including wet and dry meadows) will be cut to restore historic patterns using evidence based science as a guide. After treatment and when appropriate, fire will be used to maintain those grasslands.

Trees will be cut within select Mexican spotted owl Protected Activity Centers (PACs) to improve habitat.

Prescribed burning will be conducted over a period of 10 or more years. Burning methods will include jackpot, pile and broadcast burning. Maintenance burns will occur as needed to maintain openings and interspaces between trees, maintain tree groups and clumps, and move toward and/or maintain a Fire Regime Condition Class (FRCC) I. This class is the desired condition as it replicates the near natural historical range of fire prior to European settlement.

Measures such as fencing will be used to protect sensitive riparian resources including springs, seeps and restored channels.

Dry ephemeral channels will be restored to reduce sediment delivery, improve watershed function and increase the potential for future riparian vegetation establishment.

Existing closed roads will be utilized and/or restored. Reconstruction may include road grading, culvert installation or replacement and gravelling. Use of the roads will be temporary. Once treatments have occurred, closed roads will be returned to their previous status.

Select roads will be decommissioned and unauthorized roads closed. Decommissioning methods will include installing signs, gates, barriers, ripping and re-contouring of slopes to preclude future motorized use. Roads that have established vegetation may need minimal treatment while others may need to be entirely ripped, seeded and slopes re-contoured.

Summary of proposed activities as they may affect heritage resources:

1. Mechanical and hand thinning: Activities may include loping and scattering, machine piling, and/or skidding and removal. Mechanical treatments may involve the use of heavy machinery, such as trucks, skidders, feller-bunchers and bulldozers. Tree removal (skidding) trails are designated and estimated at 10-15% of a cut unit.
2. Fence installation: Used to protect habitat, wetlands, meadows, springs, and aspen regeneration.
3. Prescribed burning: Methods will include pile and broadcast burning across the landscape.
4. Ephemeral channel restoration: Methods may include mechanical activities that involve layering of banks, seeding and re-routing or contouring of channels.
5. Road construction and removal: Activities may include mechanical actions that involve machine grading, cutting, culvert installation, ripping, gate installation, road relocation or replacement, slope contouring and gravelling.

Project Location and Setting

The 4FRI Area of Potential Effect (APE) is located in northern Arizona on the Tusayan and Williams Ranger Districts on the Kaibab National Forest and the Flagstaff Ranger District with small portions of the Mogollon and Red Rock Ranger Districts on the Coconino National Forest (Appendix B, Figure 1).

Vegetation within the project area consists primarily of ponderosa pine with smaller concentrations of oak, pinyon-juniper and mixed conifer forests. The geology of the region is predominantly volcanic, with cinder cones across the landscape from Sunset Crater to Bill Williams Mountain. Along the southern portion of the project area limestone is dominant, as can be observed along the Mogollon rim.

Heritage Resources Overview

The following is a brief summation of the cultural histories within the 4FRI analysis area by individual Forest.

Kaibab National Forest Prehistory and History
Margaret Hangan and Neil Weintraub

Although there is evidence of Paleoindian and Archaic period occupations and possible Basketmaker camps (Lyndon 2005), the majority of the sites on the Kaibab are associated with the prehistoric Cohonina, who occupied the Coconino Plateau between AD 700 and 1200. Cohonina prehistory has been divided into phases or time periods: the Coconino Phase (AD 700-900), the Medicine Valley Phase (AD 900-1100) and the Hull Phase (AD 1100-1200). The Cohonina occupation of the south Kaibab appears to be generally restricted to the Coconino Plateau. While the majority of sites are located in the pinyon-juniper woodlands, a surprisingly large number of habitation sites occur in the ponderosa pine zone near 7200 feet around the bases of Bill Williams, Sitgreaves and Kendrick mountains (Hanson 1999). Cohonina sites contain evidence of structures, either as low masonry walls or pit house depressions. It appears that the Cohonina subsisted on a combination of hunting, gathering and horticulture. Their most diagnostic artifacts include tall, skinny and barbed obsidian projectile points and San Francisco Mountain Gray Ware ceramics.

After AD 1200, many of the prehistoric occupants migrated southeastward (Weintraub et al 2006). Between AD 1200 and the arrival of Euro-American settlers, ancestral Pais and Hopis hunted and gathered leaving scant evidence of their presence (Cleeland et al 1992). Researchers have thoroughly documented the history of the Tusayan and Williams Ranger Districts (Putt 1991 and Stein 2006). The Spanish first arrived in the 1540s, followed by mountain men and other explorers of the western territories. By the late 1800s, the Atchison, Topeka and Santa Fe railroad was established and Euro-American settlers came to the Grand Canyon area with hopes of successfully mining copper and logging timber. As a result, investors built the Grand Canyon Railway, which further opened the area to the timber, ranching, mining, tourism industries and also lead to the designation of the Tusayan National Forest (later to become the Kaibab) in 1908 and the Grand Canyon National Park in 1915.

Logging and ranching were big industries that exploited forest resources for many years. Hundreds of miles of logging railroad grades have been recorded on both the Kaibab and Coconino Forests, as have logging camps, saw mills and other associated features (Stein 2006).

Cattle and sheep grazing on the Forest lead to the development of features such as water storage tanks, corrals, and line shacks. Other sites associated with the Basque Sheep industry, such as

camps and glyphs carved into aspens, have also been found on the Forest. Historic period sites include Route 66 and its associated features, a Civilian Conservation Corps camp, Kaibab Administration sites like Camp Clover (Williams Ranger Station), Hull Cabin and the Tusayan (Moqui) Ranger Station and the historic Grand Canyon Airport (Putt 1991).

The Forest has also been an important area for traditional Native American uses in historic times (Cleeland et al 1992). Bill Williams Mountain, on the Williams Ranger District, was determined eligible for listing on the National Register as a Traditional Cultural Place (TCP) in 2000. Red Butte, on the Tusayan Ranger District, was also determined eligible in 2010 for listing as a TCP.

Coconino National Forest Prehistory and History

According to the Coconino Heritage GIS database, there are no recorded Paleoindian sites within the project area. However, these sites may exist in the region (Mabry 1998) and could be identified in the future. Seventy-five archaic period sites (6000 BC-500 AD) have been recorded. These site types are typically lithic scatters with the occasional diagnostic projectile point. In his study of projectile points on the Coconino Plateau, Lyndon (2005) identified many such artifacts routinely found in the area.

With 1,735 Sinagua sites recorded within the project area, this cultural group is by far the most numerous. Beginning with the Cinder Park phase in 500 AD and ending after the Clear Creek phase in 1400 (Pilles 1981), the Sinagua have left the most archaeological remains on the Coconino National Forest. Divided between northern and southern branches (Pilles 1981, Colton 1939), the northern branch is the predominant group within the 4FRI project area on the Coconino. After the eruption of Sunset Crater, the Sinagua people experienced significant changes in their lifestyles that included new architectural forms, changes in ceramics, population increases and unusual artifacts that may reflect outside influences (Pilles 1981, 6).

The Cohonina are another well-represented prehistoric people. They are recognized as a separate and distinguishable cultural group from their contemporary neighbors of the the Sinagua and Anasazi. They inhabited the northwest region of Arizona from 700 to 1200 AD, practicing subsistence hunting, gathering and some agriculture. Cohonina material culture was produced primarily for utilitarian purposes; however they were also somewhat active in the regional trade networks (McGregor 1951). As previously stated in the Kaibab section, Cohonina sites contain evidence of structures, either as low masonry walls or pit house depressions, and diagnostic artifacts that include tall, skinny and barbed obsidian projectile points and San Francisco Mountain Grey ware ceramics. Within the project area, 308 Coconina sites have been identified.

Sites representing the transition from the prehistoric to historic period are also occasionally found, as identified in the Coconino Heritage GIS database. These protohistoric sites reflect the long histories of Native Americans in the region. Cultures represented within the project area include the Hopi, Navajo, and Pai peoples with cultural remains ranging from artifact scatters to rock shelters, roasting pits and sweat lodges.

Early exploration of northern Arizona was sporadic with only a few entries into the region. The first recorded European visit was by the Spanish, but settlement by Europeans did not really

begin until the middle to late 19th century (Stein 1981). American explorations began around the middle of the 19th century, primarily in the form of U.S. military expeditions. The still-existent Beale Wagon Road through Flagstaff and the Crook Trail along the edge of the Mogollon Rim are some examples of that exploration.

More permanent settlement of the Flagstaff area began with the construction of the Atchison, Topeka and Santa Fe Railroad in 1882 (Janus Associates 1989, 20). Railroad construction required a large number of laborers and materials, and wooden ties were provided by the burgeoning timber industry. According to Stein (1981) the timber industry was to become the most important industry in northern Arizona. This is reflected by more than 593 miles of logging railroads on the Coconino alone (Coconino GIS database) with many more miles on the Kaibab to the west (Stein 2006).

Along with the railroad came tourism. These visitors were in search of the region's natural beauty, especially the Grand Canyon. The Grand Canyon stage line was one of the first endeavors to exploit this wave of visitors (Mangum 1999). Portions of this historic stage line are still in existence today on the Forest, with segments identified within the 4FRI project area. Tourism continued to grow with the increase in automobile use (Stein 1981); the creation of Route 66 through northern Arizona in the 1920s is one example of that growth.

Ranching was also an important industry in the late 19th century. One aspect of ranching on the Coconino was the immigration of Basque sheepherders to the Flagstaff area (Stein 1991, 9). Basque shepherds were common fixtures on the Coconino, leaving temporary camps and tree carvings that are still found today.

With the increase of natural resource extraction, the federal government began attempts to manage those resources. One of the first federal efforts at controlling the overuse of natural resources was the Forest Reserve Act of 1891. This legislation set aside forested lands throughout the western U.S. for conservation. This early excursion into land management was followed by a number of reorganizations, eventually resulting in the designation of the Coconino National Forest in 1908 (Stein 1981). Many of the early Forest Service ranger stations, guard stations, lookouts and other facilities are still in existence and make up a significant portion of the historic sites found on the Forest.

During the Great Depression of the 1930s, the federal government's New Deal programs were initiated on the Forest. Water development programs were implemented (Collins 1999, 86) as were forestry- related programs undertaken by the Civilian Conservation Corps (CCC). With the advent of World War II, the Navajo Ordnance Depot was created, which increased local employment, including Native Americans (Westerlund 2003). Many of historical remains reflecting this time period can still be found on the Coconino: CCC-era water control features, structures and camps are still in place, as are Native American construction worker temporary camps near the Navajo Army Depot.

Existing Conditions and Previous Survey

Both Forests have completed a significant amount of previous survey within the project area (Appendix B, Figure 4). The Kaibab has completed 46% previous survey and the Coconino has approximately 40% previous survey within the Area of Potential Effect.

Table 1: Kaibab NF Heritage Sites and Surveys

Forest	Acres Total In 4FRI	Total Acres Previous Survey	Cultural Resources Recorded	National Register Listed	National Register Eligible	Unevaluated Sites	Sites Previously Evaluated Ineligible
Kaibab	530, 187	245,386	3,843	15	979	2593	256

Kaibab National Forest

Within the 4FRI APE, Kaibab National Forest archaeologists have conducted 877 heritage resource surveys intensively inventorying 245,386 acres of the project area's 530,187 acres (46%). Archaeologists have identified 3,843 cultural resources, of which 15 are listed on the National Register of Historic Places (National Register), 979 were declared eligible, 2593 were considered unevaluated, and 256 were determined to not eligible for the National Register. The majority (38%) of these sites are small prehistoric Cohonina habitations consisting of one or two pit houses and/or above ground masonry rubble (n=1454). Twenty-six percent are artifact scatters (n=992) associated with temporary prehistoric hunting and gathering camps. The remaining sites reflect the full range of the diverse history of the Kaibab ranging from ca. 9000 BC through AD 1950. These sites include rock art, cliff dwellings, logging railroad grades and camps, fire towers and lookout trees, historic Forest Service administrative sites, corrals, Basque sheep herding camps, mining camps, CCC camps, Historic Route 66 alignments, and temporary Native American shelters such sweat lodges and brush shelters.

Table 2: Coconino NF Heritage Sites and Surveys

Forest	Acres Total In 4FRI	Acres Inventoried 4FRI analysis area	Cultural Resources Recorded	National Register Listed	National Register Eligible	Unevaluated Sites	Sites Previously Evaluated Ineligible
Coconino	817, 151	326,087	3,366	22	898	2,300	136

Coconino National Forest

According to the most recent GIS data, Coconino National Forest archaeologists have completed 1,297 cultural resource surveys within the 4FRI APE that include 1,120 block and 278 linear surveys for a total of 326,087 acres. This existing survey accounts for 40% of the total 817,151 acres within the APE. There are 3,366 cultural resources with 22 listed on the National Register; 898 declared eligible for the National Register; 2,300 considered unevaluated and the 136 sites

were not eligible for the National Register. The remaining 10 sites have no eligibility information and will be considered eligible for project purposes.

The majority of heritage resources within the 4FRI APE are associated with the Sinagua cultural group. These site types range from small artifact scatters to multiple- room pueblos along with lesser numbers of agricultural features, ballcourts, rock shelters and rock art. There are also defined Cohonina sites with similar associated site types and artifacts as identified on the Kaibab. These Cohonina sites tend to be located on the western and northern areas of the Coconino's portion of the project area. Other prehistoric resources identified in the database include Archaic sites of various dates mostly consisting of lithic scatters with diagnostic projectile points.

Protohistoric heritage resources within the project boundary as identified in the GIS data base include Hopi, Navajo and Pai related sites. Some of these sites transcend into the Historic period and include primarily artifact scatters and some more recent brush structures.

The historic resources consist of 459 sites with a historical component. These include what have been identified as Anglo, Basque, Mexican and even one "Spanish" site. Historic site types typically found include logging railroad grades and camps, fire towers, lookout trees, historic Forest Service administrative buildings, corrals, Basque sheep herding camps, CCC camps and construction projects, and temporary Native American shelters such as sweat lodges and brush shelters.

One important Traditional Cultural Property (TCP) encompasses the San Francisco Peaks, which is of great significance to American Indians in the region.

Site Density Model

As part of the 4FRI project, an archaeological site density model was created to assist with site predications and survey strategies across both Forests See Appendix D). The model was developed using similar soil units (Terrestrial Ecological Units) and survey data from both Forests. GIS specialist Chris Barrett, along with Flagstaff Zone archaeologist Jeremy Haines and Kaibab South Zone archaeologist Neil Weintraub, developed the model with Kaibab and Coconino Forest archaeologists review.

Project survey strategies were developed using a combination of GIS data, maps, and known archaeological site densities found on the Forests. Two categories were created for 4FRI; areas with site densities that were lower than the Forest average, and areas with site densities that were higher than the Forest average. The determination to use two categories is based on direction found in Appendix J (USDA 2010, section I, paragraph 6). Each Forest developed the average break between the high and low densities based on Forest data as well as the archaeologists' local knowledge and experience. The model used the Forest's average site density as the cut-off point, and created a map that displayed the low and high site density areas within the 4FRI project boundary.

Kaibab archaeologists evaluated the outcomes of three versions of the density model based on TEU, Square Mile grid, and previous survey data. They decided that the square mile grid was too low at 6 sites per square mile. It is likely that the data outliers were driving down the average of the square mile grid. The TEU Model and Site Density within the surveyed 4 FRI areas were far closer to the Forest-wide average of 9.74 sites per square mile.

Coconino archaeologists evaluated the outcomes of the models as well. They applied a simple ratio of sites/surveyed acres by square mile with the mean site number of approximately 7.5/sites per sq. mile. This determined that low site densities ranged from 0 – 7 and high site densities ranged from 8 – 66. These ranges of numbers are not unexpected and are similar to figures on the Kaibab National Forest.

The model was developed to assist Heritage managers to identify which areas of 4FRI were considered to be low site density, and to provide information to help determine the amount of survey needed in the low site density areas (Appendix B, Figure 5). The model is based on 35 plus years of archaeological field survey data on both Forests. The model will be used along with site density predictions, targeted areas for survey such as are described below, Native American consultations, and the archaeologists' knowledge of that area to determine where surveys will be located. Using survey results and monitoring data, the model will continue to be revised over the life of the project as needed to develop a more refined tool. See Appendix D for full model development process and description.

Multiple Forest Survey Strategy

For the first two to three years of 4FRI implementation, "shelf stock" will be employed. Shelf stock is an existing fuels or forest health project with previously-completed NEPA analysis and prior consultations with the SHPO and interested tribes. Both the Kaibab and Coconino have a number of these existing projects. Using shelf stock will allow fuel reduction and forest health restoration treatments similar to those of 4FRI to proceed; treatments would then transition into areas of the current analysis proposed under the EIS and this Heritage Strategy.

Developing a multiple-Forest survey strategy for 4FRI will help to provide consistency in the way section 106 compliance is conducted. The Kaibab and the Coconino have approached their methods of inventory within the ponderosa pine environments very differently. The Kaibab established a practice of conducting approximately 100% survey for projects during the late 1970s and have continued this approach with the exception of proposed vegetation treatments in open grasslands. Conversely, the Coconino has conducted intensive 100% inventories in high site density areas and for intensive ground disturbing activities, but has only conducted sample surveys of around 15-25% in low density areas.

To bridge this gap, meetings were held among archaeologists from both Forests along with Region 3 archaeologist Dave Johnson. During the 4FRI heritage meetings, an implementation strategy was created using Appendix J to establish the big picture inventory strategy for 4FRI, and which resulted in a new site density model and appropriate survey strategies to develop a consistent approach across the Forests while ensuring local heritage concerns were addressed.

This strategy ensures consistency across all Forests involved in the project. However, to allow for flexibility at the local level, a survey strategy must also take into account the unique or differing conditions on each unit. To this end, archaeologists from both the Coconino and Kaibab have developed a common plan to allow the Forest Archaeologist the flexibility to account for those conditions on his or her unit.

This strategy adopts aspects from both Forests under the umbrella of Appendix J to ensure adequate archaeological inventories are completed. In general, 100% survey is necessary for high-impact treatment activities of intensive ground disturbance. In locations of high site density as identified in the 4FRI Coconino and Kaibab Heritage site density model (see Appendix B, Figure 5), 100% survey is also required. Areas of previous extensive ground disturbance in high site density areas can have anywhere from 0-100% additional survey, based on the Forest Archaeologist's knowledge of the area, the nature, degree and extent of previous ground disturbing activities and the likelihood of finding cultural resources or locations within the treated areas that remain undisturbed. See Table 3 below for specific survey requirements based on proposed action undertakings.

For project locations with low site densities or prescribed burning, a sample survey of up to an additional 25% of new survey is deemed necessary. This is in addition to any existing, previously-completed survey. In some cases no additional survey will be required, while in others the full 25% may be needed. This determination will be made by the Forest Archaeologist on a project by project basis.

This sample survey is by project areas of approximately 5,000-10,000 aces in size, identified under 4FRI as Task Orders (i.e. a site specific location for implementation). The sample strategy will only be used in low site density areas per the 4FRI site density model. The goal of this plan is to strategically focus inventory efforts in low density areas toward locations with higher probabilities of heritage resources or other areas of concern.

The approach begins with surveying intensive ground disturbance locations within each task order such as roads, landings, etc. at 100% per Appendix J. After the intensive ground disturbances are surveyed, the project archeologist will focus on high probability areas such as springs, sites identified on historic maps and areas of interest to Native Americans. After these primary targets are examined, the Forest Archaeologist may use the remainder of the 25% survey to examine areas of interest, fill in survey gaps, or to survey other areas of concern. The Forest Heritage program manager should also use this additional survey to validate the site density model and make recommendations to change the model if inconsistencies are found.

The Heritage program manager may elect to do no new survey in a project area if intensive ground disturbance is not anticipated. Conversely, if the Heritage program manager may feel the need to do additional survey for a specific task order, that manager is free to discuss with his or her line officer and develop a new survey strategy for that situation.

Table 3: Inventory methods in accordance with Section I of Appendix J of the Programmatic Agreement and based on site density.

Treatment	High Site Density	Low Site Density	Appendix J, Sec. I Reference Number
Areas previously surveyed to current standards	None	None	No. 1
Mechanical, high impact or intensive ground disturbing activities	100%	100%	No. 6
Other mechanical disturbances not considered high impact	100%	Sample up to an additional 25% if necessary. Discretion of Forest Arch	No 6, 4FRI 106 doc.
Areas previously disturbed by extensive ground disturbance	Survey up to 100% if necessary. Discretion of Forest Arch. Concerns identified to leadership	Sample up to an additional 25%. Discretion of Forest Arch	No. 3, 4FRI 106 doc.
Hand thinning No Prescribed burning	May or may not need new survey. Discretion of Forest Arch Up to 25%	May or may not need new survey. Discretion of Forest Arch. Up to 25%	No. 4
Prescribed burning*	Up to 100% if there is a high density of fire-sensitive sites	Up to an additional 25% if there is a low density of fire-sensitive sites	No. 5, 4FRI 106 doc.
New fence construction	Discretion of Forest Arch based on site density, etc	Discretion of Forest Arch. Based on site density, etc	Region 3 PA, Appendix A, III Screened Exemptions

***Prescribed fire through non -fire sensitive sites is a common approach to regional forest land management. With the historic short term fire return intervals on the two Forests, many prehistoric sites have burned naturally in the past. See Appendix C for an overview of fire effects and Heritage resources.**

Project Implementation

Appendix J, Stipulation 14, states that a phased approach should be used only when a large-scale project is to be implemented spanning more than one fiscal year. The Four Forest Restoration Initiative meets that criterion as it will be implemented over a 10 year time frame. General locations and treatments are identified through the initial EIS process. However, site specific locations for implementation (Task Orders) may be years in the future.

Monitoring and Adaptive Management

The purpose of a monitoring program is to assess current management strategy effectiveness. Projects that are implemented over a long period of time should have measures in place to assess and revise proposed plans as needed. Adaptive Management allows land managers to assess those monitored conditions and use the best science available to adopt new tactics for changing conditions and revise strategies that no longer work.

Questions that could arise in the future include:

- Does the project area contain newly recognized site types that would not have been considered when the original inventory strategy was initiated?
- Is the current survey strategy sufficient?
- Are there unanticipated effects?
- Does the site density model correctly identify predicted densities?

Each Forest Heritage program should develop on-going assessment strategies for their unique conditions and heritage resources as outlined in stipulation 9 of Appendix J. It is not appropriate to develop specific monitoring plans at the multiple Forest level as this diminishes the ability of individual heritage personnel to manage for Forest-specific issues. However, the typical process for implementing these types of projects is to monitor and then mark for avoidance all eligible historic properties prior to thinning operations. As initial entry prescribed burns are implemented, fire sensitive sites are again monitored and marked for avoidance. This process is repeated every 5-10 years for all maintenance burning activities. This process is a common practice across both Forests for all fuels reduction and forest health projects and has been so for years. As sites are monitored their conditions are assessed, documented and reports are compiled, usually annually, and submitted to SHPO for information along with any concerns.

Another type of monitoring involves comparing the results of the surveys for the individual task orders to the predictive model, and assessing whether or not the model accurately predicted the numbers of sites found. Portions of the surveys in the low site density areas can be targeted to examine areas suspected to have higher (or lower) site densities, further testing the model.

If monitoring reveals any issues or concerns, Forest Heritage managers can revise survey strategies and the model to address those concerns. Any revised approaches will be in consultation with Forest leadership as well as Tribes and SHPO.

All eligible Heritage properties will be protected per Stipulation 8 and Section 2 under Appendix J. Unanticipated discovery situations will follow Stipulation 13. Forest archaeologists may also use additional protection measures as the need arises.

Tribal Consultation

Based on historic, ethnographic, and tribal information, American Indian tribes and groups have historically occupied, used and/or have ties to the lands currently managed by the Coconino National Forest. These groups include the Dine' Medicine Man's Association, Fort McDowell Yavapai Nation, Hopi Tribe, Hualapai Tribe, Havasupai Tribe, Navajo Nation, San Carlos Apache Tribe, Tonto Apache Tribe, Yavapai-Apache Nation, Yavapai-Prescott Tribe, White Mountain Apache Tribe, and Pueblo of Zuni.

Consultation with Native American Tribes has been initiated and will be on-going throughout the planning process. The Coconino National Forest's Tribal Liaison is the lead for these consultations. Project notifications and discussions have included the Hopi Tribe, Navajo Nation, Pueblo of Zuni, Havasupai Tribe, Hualapai Tribe, Yavapai-Apache Nation, Yavapai-Prescott Tribe, Fort McDowell Yavapai Nation, White Mountain Apache Tribe, San Carlos Apache Tribe, Tonto Apache Tribe, and the Dine' Medicine Man's Association and will continue into the future.

Compliance and Reporting

Appendix J and this document serve as the initial Section 106 compliance for the Coconino and Kaibab portions of the first 4FRI EIS. Should one of the Forests wish to revise their heritage compliance strategy, they may re-consult with SHPO, Tribes and leadership as necessary.

Heritage reports for project specific undertakings and task orders will be provided to SHPO upon completion of fieldwork for each task order and will include survey results, site eligibility, determination of effect as well as any adaptive management concerns or issues. Provided that the Forests ensure that the survey strategy outlined above as well as the stipulations within Appendix J of the Region 3 PA are implemented, this undertaking will result in no adverse effect to historic properties.

Conclusions and Recommendations

The proposed 4FRI Forest Restoration Project will assist in the protection of heritage resources. With heavy fuel loading in the forest, heritage sites are susceptible to high heat effects, long residence times, increased erosion and intensive ground disturbance from fire suppression actions, including bulldozer control lines. See Appendix C for a review of fire effects on heritage resources and the benefits of fuels reduction and forest health projects for these resources.

The 4FRI Heritage Strategy consists of three components: 1.) Appendix J allows a consistent approach across all Forests involved in the project and ensures the complete survey of intensive ground disturbance as well as high site density areas; 2.) The 4FRI model assists in the

identification of locations of the Forest that need complete or sample surveys and 3.) The additional survey up to 25% or the project area in low site density areas allows heritage managers the ability to focus survey efforts in locations of the most need. Along with existing survey coverage of 40% previous survey on the Coconino and 46% on the Kaibab, this ensures heritage resources are identified. The proposed plan also allows Forest Service leadership the ability to account for potential costs and resources needed to accomplish the 10-20 year goal of landscape level forest restoration.

Should the SHPO and Native American Tribes concur with this proposal, the Coconino and Kaibab National Forests will implement Appendix J and the proposed survey strategy. All sites listed, considered eligible or currently unevaluated for the National Register of Historic Places shall receive protection from project activities. As long as the phased project conforms to Appendix J and the agreed upon survey strategy, the undertaking will result in no adverse effect to historic properties.

This report is submitted in compliance with the provisions of the National Historic Preservation Act of 1966, as amended.

Acknowledgements

In the past, Forests have typically completed work within the boundaries of each individual unit. The development of a multi-Forest Heritage Strategy could not have been accomplished without support and collaboration from heritage personnel on both Forests as well from the Region 3 archaeologist, Arizona SHPO and Tribes.

Coconino National Forest Archaeologist (Heritage Program Manager) Peter Pilles offered suggestions throughout the process, as did Kaibab National Forest Heritage Program Manager Margaret Hangan. Margaret was also instrumental in initiating the 4FRI heritage consultation process.

GIS specialist Chris Barrett, with the USFS Enterprise team, was invaluable in his knowledge of GIS and heritage model development. Flagstaff District Archaeologist Jeremy Haines and Kaibab South Zone Archaeologist Neil Weintraub lent their extensive knowledge and technical skills as well as offered significant advice to aid in developing survey strategies.

Region 3 archaeologist Dave Johnson offered his guidance from a Regional perspective and without his intimate knowledge of Appendix J, this process would have been significantly more difficult.

Finally, Assistant Kaibab Forest Archaeologist Mike Lyndon offered insights from his experience working on both Forests and suggested the proposed sample survey strategy.

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Appendix A

REGION 3 PROGRAMMATIC AGREEMENT, APPENDIX J
STANDARD CONSULTATION PROTOCOL
FOR LARGE-SCALE FUELS REDUCTION, VEGETATION TREATMENT, AND HABITAT IMPROVEMENT PROJECTS

The USDA Forest Service (FS) and other federal land managing agencies are directed by Congress to implement an accelerated, multi-year program of large-scale hazardous fuels reduction, vegetation treatment, and habitat improvement projects under a variety of legislation including the Healthy Forests Restoration Act of 2003 and the American Recovery and Reinvestment Act of 2009 (ARRA).

Improving forest health, reducing the threat of catastrophic wildfire to communities and forests across the landscape, and moving the nation closer to energy independence through the use of woody biomass will provide jobs, a primary emphasis of ARRA.

The Federal Fire Policy emphasizes that wildland fire is a critical natural process that must be reintroduced into the ecosystem. Currently, unmanaged fuel loads in many areas support large, hot, uncontrolled, and devastating wildfires that destroy life and property, including historic properties. Mechanical treatments, such as thinning and timber sales, in combination with prescribed fire will reduce fuel loading and stand density in areas adjacent to the Wildland Urban Interface, for example, so that wildfires approaching these areas will "go to the ground" where they can be effectively and safely suppressed.

Fuels reduction projects and other vegetation treatment and habitat improvement projects will also help protect historic properties from the devastating effects of catastrophic wildfires and the associated suppression activities and subsequent erosion. Although beneficial to historic properties over the long-term, these projects are undertakings that have the potential to affect historic properties, particularly fire-sensitive sites, and steps should be taken to avoid or minimize those effects.

Stipulation IV.A.4 of the Region 3 *First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities* (Programmatic Agreement) provides for the development of "Standard Consultation Protocols" for certain classes of undertakings where effects on historic properties and resulting protection and treatment are similar and repetitive. Such protocols specify standard procedures for the identification, evaluation, and treatment of historic properties. In accordance with the Programmatic Agreement, in developing this protocol the Forest Service consulted with the Arizona, New Mexico, Oklahoma, and Texas State Historic Preservation Officers (SHPOs), the Advisory Council on Historic Preservation (Council), and 50 Indian tribes for whom properties within National Forests might have traditional cultural or religious significance.

Once approved by the Forest Service, the Council, and the SHPOs and once formally incorporated into the Programmatic Agreement as Appendix J, the Forests may implement the procedures identified in this protocol in lieu of standard consultation procedures in the

Programmatic Agreement or the Council's regulations. when taking into account the potential effects of these types of projects on historic properties. This protocol will fully supersede all provisions of the 2004 *First Amended Programmatic Agreement Among the USDA Forest Service, Southwestern Region, Arizona State Historic Preservation Officer, New Mexico State Historic Preservation Officer and The Advisory Council on Historic Preservation Regarding Wildland Urban Interface And Other Large-Scale Hazardous Fuels Reduction Projects.*

STIPULATIONS

The FS shall ensure that the following stipulations are carried out:

1. SCOPE. This protocol covers ARRA projects, WUI projects, and other large-scale (larger than 1,000 acres) fuels reduction, vegetation treatment, and habitat improvement projects. Activities covered by the protocol include: hand thinning; mechanical thinning; use of equipment such as Hydro-ax, Agra-ax, brush crushers and brushhogs; timber sales; slash disposal, including lopping and scattering, chipping, pile burning, and windrow or jackpot burning; broadcast burning; and fuelwood use, including free use, fuelwood permits, and commercial fuelwood sales.

2. INTERNAL COORDINATION AND TRACKING. The FS shall ensure that heritage specialists are brought into the planning process for projects as early as possible so that the potential effects to cultural resources can be evaluated. The FS shall also ensure that a system is in place to track implementation of heritage resource protection and monitoring requirements, and that necessary communication and coordination between heritage and fuels treatment and/or other appropriate specialists will continue throughout the implementation of projects carried out under this protocol.

3. TRIBAL CONSULTATION. The FS shall follow the procedures for tribal consultation contained in Stipulation III of the Programmatic Agreement. As early as possible in the planning process, the FS shall consult with American Indian tribes to determine if any properties of traditional cultural or religious importance are present within the project's area of potential effect. If specific properties are identified, the FS shall consult with the appropriate tribes concerning evaluation, determination of effects, and protection measures. If agreement cannot be reached or if adverse effects cannot be avoided, the FS shall consult case-by-case with interested tribe(s) and the SHPO as provided for in the Programmatic Agreement.

4. PUBLIC INVOLVEMENT. The FS shall use the procedures in Stipulation II of the Programmatic Agreement to seek and consider the views of the public.

5. IDENTIFICATION. The Forest Archaeologist shall determine or approve the level of field survey for each project using the guidelines in Section I of this protocol. Alternatively, a Forest or Forests may opt to develop a Forest-wide survey strategy for WUI and other large-scale fuels reduction, vegetation treatment, or habitat improvement projects in consultation with the SHPO and thereby further eliminate the need for individual project notifications for sample surveys.

6. EVALUATION. The FS and the SHPOs agree that certain classes of properties (Appendix B of the Programmatic Agreement) may be determined eligible for the National Register of Historic Places for Section 106 purposes based on survey information without further case-by-case SHPO consultation. The FS shall ensure that properties that will be affected by an undertaking are evaluated conclusively for eligibility for inclusion in the National Register by applying the National Register criteria (36 CFR 63) in consultation with the SHPO and any Indian tribe that attaches religious and cultural significance to the properties. Forests are encouraged to make eligibility determinations for other properties in consultation with the SHPO whenever possible; however, the eligibility of a property may remain unresolved, provided it is treated as eligible and the property will not be affected by the undertaking.

7. EFFECT. Following completion of the survey approved by the Forest Archaeologist in accordance with Section I, the FS shall determine the effects of the project on historic properties:

a) No Historic Properties Affected. If no properties are identified within the area of potential effect or if properties are present and all eligible and unevaluated properties are avoided through application of the site protection measures in Section II, and provided that none of the conditions requiring case-by-case consultation specified in the Programmatic Agreement (Stipulation V.E.6) apply, a determination of "No Historic Properties Affected" will be made for the project in accordance with 36 CFR 800.4(d)(1). This will include only those projects in which a 100% survey is conducted and all eligible and unevaluated properties will be protected.

b) No Adverse Effect. If portions of the area of potential effect have not been surveyed because an approved sample survey strategy was implemented, or if eligible and/or unevaluated properties are present and will be affected, but through application of the protection measures in Section II potential adverse effects on eligible and unevaluated properties have been minimized to the extent that they do not meet the criteria of Adverse Effect contained in 36 CFR 800.5(a)(1), and provided that none of the conditions requiring case-by-case consultation specified in the Programmatic Agreement (Stipulation V.E.6) apply, a finding of "No Adverse Effect" will be made for the project in accordance with 36 CFR 800.5(b).

c) Adverse Effect. If the Forest Archaeologist determines that one or more properties may be adversely affected, the FS shall consult case by case on the project in accordance with the Programmatic Agreement (Stipulation V.E.5 and 6).

8. PROTECTION. The Forest Archaeologist shall draw from the protection measures in Section II to ensure that effects to historic properties are avoided. Site protection requirements shall be documented in the inventory report and on the FS Inventory Standards and Accounting (IS&A) form.

9. MONITORING. Terms and conditions of Section 106 compliance shall include appropriate post-project monitoring requirements as determined necessary by the Forest Archaeologist, to assess the effectiveness of protection measures. One purpose of post-treatment monitoring is to gather data that will be used to improve planning for protection of heritage resources in future projects. For prescribed fires, Forests are encouraged to assess the effects of prescribed fire on both fire-sensitive and non fire-sensitive sites to expand available information on the effects of

prescribed fire on historic properties. All site monitoring shall be documented on a site update form and/or monitoring report as appropriate. Each Forest shall maintain an updated list of sites/projects to be monitored which will include the date monitoring is completed and the monitoring results.

10. INVENTORY REPORT. Inventory reports shall conform to the Programmatic Agreement (Stipulation V.C.4). The FS shall also ensure that reports include a description of all planned activities, equipment to be used, expected impacts, and a detailed discussion and rationale for the survey strategy if less than 100%.

11. APPROVAL. When all of the above stipulations are complied with and the inventory report has been approved by the Forest Archaeologist, and provided that the undertaking will not have an adverse effect on historic properties and none of the conditions requiring case-by-case consultation specified in the Programmatic Agreement (Stipulation V.E.6) apply, the Forest Supervisor may approve the report and proceed with the undertaking, provided all site-specific protection measures are implemented. The Forest Supervisor shall forward a copy of the report, IS&A form, and associated site forms to the SHPO within 30 days, unless otherwise agreed to with the SHPO.

12. CASE-BY-CASE CONSULTATION. The FS shall follow the Programmatic Agreement (Stipulation V.E.6) for direction on when case-by-case consultation is necessary.

13. DISCOVERY SITUATIONS. There is the potential for encountering previously unrecorded properties or for affecting properties in an unanticipated manner during the course of these projects. Previously unrecorded properties that are encountered during the course of a project shall be documented and protected in the same manner as other properties, using the protection measures in Section II. If the FS determines that a property has been damaged, the FS shall halt all activities that could result in further damage to the property and shall notify the appropriate SHPO concerning proposed actions to resolve adverse effects. The SHPO shall respond within 48 hours of notification. The FS shall carry out the agreed-upon actions. If human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered, the provisions of NAGPRA (25 USC 3002(d)) and NAGPRA regulations (43 CFR 10) shall be followed. All work in the immediate vicinity of the discovery shall stop, and the FS shall take all reasonable steps necessary for the protection of the remains and objects.

14. PHASING. A phased approach should be used only when a large-scale project is to be implemented in phases spanning more than one fiscal year and it is not reasonably possible to complete Section 106 compliance for all aspects of the undertaking prior to reaching a NEPA decision. Where deemed necessary by the Forest Supervisor, consultation for such a project may be carried out in two or more phases corresponding to the implementation phases of the project. In this phased approach, a final NEPA decision on the project may be made prior to completion of the identification and evaluation of properties in the entire project area provided that all of the following requirements are met:

a. none of the conditions in the Programmatic Agreement Stipulation V.E.6 apply to the project;

b. the requirements in Stipulations 2-8 in this protocol have been completed for the first phase of the project or a justification has been provided to the SHPO as to why completion of the first phase is not feasible;
c. an initial Section 106 compliance report and signed IS&A form are completed prior to the NEPA Decision and clearly state that the identification and protection requirements of this protocol shall be completed prior to the authorization of on-the-ground work in each phase of the project
d. the expected nature and distribution of properties in the entire project area and anticipated effects are discussed and considered in the initial project-wide Section 106 compliance report and in the NEPA analysis;
e. the protection measures in Section II will be sufficient to protect properties in the entire project area, and;
f. the NEPA decision document clearly states that initiation of work in any phase of the project will be contingent upon completion of the identification and protection of historic properties and compliance with applicable provisions of NHPA in accordance with this protocol.

If the FS subsequently determines that adverse effects on historic properties in any phase of the project cannot be avoided, the FS shall consult with the SHPO and other consulting parties in accordance with the Programmatic Agreement (Stipulation V.E.5 and 6) and will amend its decision if necessary to disclose the effects.

15. ANNUAL REVIEW. As part of the Annual Meeting carried out pursuant to the Programmatic Agreement (Stipulation XIII.D), the Forests, the SHPO, and the Council, if it chooses to participate, shall discuss the activities carried out pursuant to this protocol, re-evaluate its procedures, and determine whether continuation, modification, or cancellation is appropriate.

16. REVISIONS AND AMENDMENTS. Any signatory to this protocol may request that it be revised or amended, whereupon the parties shall consult to consider the change. Changes may be made by written consent of the Regional Forester, SHPOs, and Council after appropriate consultation.

17. TERMINATION. Any signatory to this protocol may terminate it by providing thirty (30) days notice to the other parties. The signatories will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, the FS shall comply with the Region's Programmatic Agreement, or 36 CFR 800, with regard to individual undertakings that otherwise would be covered by this protocol. Termination by an individual SHPO shall only terminate the application of the protocol within the jurisdiction of that SHPO.

18. EXECUTION. Execution and implementation of this protocol satisfies the Forest Service's Section 106 responsibilities for all WUI and ARRA projects and other large-scale fuels reduction, vegetation treatment and habitat improvement projects in the Region that are treated in conformance with the stipulations herein.

19. IMPLEMENTATION. This protocol becomes effective on the date of the last signature below and will be implemented immediately.

SIGNATURES:

/s/ Corbin L. Newman Jr. 12/23/2009
Corbin L. Newman Jr., Regional Forester Date
USDA Forest Service, Southwestern Region

/s/ James W. Garrison 1/22/2010
James W. Garrison, State Historic Preservation Officer Date
State of Arizona

/s/ Jan Biella 1/4/2010
Jan Biella, Interim State Historic Preservation Officer Date
State of New Mexico

/s/ Bob Black 2/12/2010
Bob L. Blackburn, State Historic Preservation Officer Date
State of Oklahoma

/s/ Mark Wolfe 1/14/2010
Mark Wolfe, State Historic Preservation Officer Date
State of Texas

/s/ Ralston Cox 1/27/2010
for John M. Fowler, Executive Director Date
Advisory Council on Historic Preservation

APPENDIX J
SECTION I

HERITAGE RESOURCE SURVEY STRATEGIES FOR LARGE-SCALE FUELS REDUCTION, VEGETATION TREATMENT, AND HABITAT IMPROVEMENT PROJECTS

The following guidelines will be used to determine survey strategies under this protocol.

Pre-field Research

The Forests will utilize relevant information to assess the project's potential to affect heritage properties and the expected nature and distribution of historic properties that may be affected.

Expected nature and severity of project impacts (this should include consideration of all planned activities and entries) based on:

- type and intensity of mechanical treatment
- type and intensity of prescribed burn, including fuel loading and fire prescription
- type and intensity of fuelwood use
- other associated ground disturbing activities

Expected nature and distribution of heritage resources based on:

- heritage GIS survey and site layers or hard-copy survey and site atlases
- previous heritage reports and site forms
- cultural resource overviews and planning assessments
- information obtained through tribal consultation and public input
- information provided by other resource specialists familiar with the project area
- topographic maps, aerial photographs, ortho-photo quads
- other available GIS layers and maps including soils, vegetation type, slope
- determination of known/expected fire-sensitive sites

Field Survey

Not all situations will require 100% survey. In most cases, the Forest Archaeologist will be able to determine the level of survey needed based on the following guidance. Where not specifically required below, forest archaeologists are encouraged to discuss sampling survey designs with SHPO. The following will guide the identification of areas selected for survey and the level of survey coverage.

1. Areas previously surveyed to current standards, as defined in paragraph V.C.2 of the Programmatic Agreement, do not have to be resurveyed.

2. Activities conducted on slopes greater than 40% may or may not be surveyed at the discretion of the Forest Archeologist without prior SHPO consultation.

3. For activities conducted within areas that were previously disturbed by chaining, discing, plowing, windrowing, crushing, or other extensive ground disturbing treatments, a sample survey strategy may be approved by the Forest Archaeologist without prior consultation with the SHPO. The nature, degree and extent of previous ground disturbing activities and the likelihood of finding cultural resources or locations within the treated areas that remain undisturbed shall be considered when making the decision to survey at less than 100%. This information will be documented and discussed in the survey report.

4. Hand thinning. Activities involving hand cutting and /or thinning, with no use of mechanized equipment and no follow-up prescribed burning, are low impact activities, and may or may not be surveyed at the discretion of the Forest Archeologist without prior SHPO consultation.

5. Prescribed burns. Surveys for prescribed burn areas will include all locations likely to contain fire-sensitive sites based on pre-field research, expected fire behavior, and other relevant data. Additional survey may be conducted at the Forest Archeologist's discretion. The survey strategy shall identify the types of sites that are considered fire-sensitive for each prescribed burn area, using the guidelines in Section III of this protocol. This should include both known fire-sensitive sites and other sites considered fire-sensitive for the specific burn based on fuel loading, site characteristics, and expected fire behavior. If existing inventories indicate the presence or likelihood of fire-sensitive properties throughout the area of potential effect, the area will be surveyed 100% or a proposed sample survey strategy will be submitted to the SHPO for review in accordance with the Programmatic Agreement (Stipulation V.C.3).

6. Other Fuels Reduction, Vegetation Treatment, and Habitat Improvement Projects. Except for the provisions in 1 through 3 above, all high impact treatments resulting in intensive ground disturbance that would likely adversely affect any historic properties that may be located in the area of potential effect will receive 100% survey. These treatments include but are not limited to:

- construction of roads, landings and skid trails
- intensive mechanical treatments: machine piling, windrowing, chaining, plowing, mechanical crushing
- clearcuts
- timber sale cutting units
- hand and mechanical fire line construction
- staging areas
- constructed safety zones
- installation of water bars and other constructed erosion control features

For other mechanical fuels reduction, vegetation treatment, and habitat improvement projects with potential impacts that are not considered to be high impact treatments, including but not limited to pre-commercial thinning of small diameter trees and fuelwood areas dispersed over a large area (e.g. District-wide), a sample survey strategy may be approved by the Forest

Archaeologist without prior consultation with the SHPO if existing inventories indicate the site density in the area of potential effect is lower than the average site density for the forest and the level of impact is such that the Forest Archaeologist determines that it is unlikely that any historic properties that may be present outside the surveyed areas will be adversely affected by the activity. Information concerning the nature of the undertaking, site density, and evaluation of potential effects that led to this determination will be discussed in the survey report. If existing inventories do not indicate the site density is lower than the forest average, or if the Forest Archaeologist determines that the undertaking will result in intensive ground disturbance, the areas will be surveyed at 100%, except for the provisions in 1 through 3 above, or a proposed sample survey strategy will be submitted to the SHPO for review in accordance with the Programmatic Agreement (Stipulation V.C.3).

7. Any deviation from the above survey procedures that involves less than 100% survey will require prior SHPO consultation in accordance with the Programmatic Agreement (Stipulation V.C.3).

APPENDIX J
SECTION II

AGREED-UPON STANDARD SITE PROTECTION MEASURES

Various combinations of the following protection measures may be approved by the Forest Archaeologist to protect sites for projects listed in this protocol without additional SHPO consultation.

Prescribed Burning

Protect fire-sensitive sites:

- Exclude from project area
- Hand line
- Black line
- Wet line
- Foam retardant
- Structural fire shelter
- Remove heavy fuels from site by hand
- Prevent in-situ heavy fuels that cannot be removed from ignition (e.g., flush-cut & bury stumps)
- Implement same protective measures for future maintenance burns.

Protect selected other sites from burning (optional).

Allow burning over non fire-sensitive sites provided:

- No ignition points within site boundaries
- No staging of equipment within site boundaries
- No slash piles within site boundaries.

Allow construction of safety zones and additional lines in 100% surveyed areas, with archaeological monitoring as appropriate to assure historic properties are avoided.

Thinning, Hand and Mechanical Treatments

No treatments or ground disturbance within site boundaries -or-

Allow treatments within site boundaries, provided:

- Cutting is accomplished using hand tools only
- Large diameter trees are felled away from all features
- materials removed from the site are removed by hand
- No dragging of logs, trees, or thinned material across or within site boundaries.

No use of vehicles or other mechanized equipment within site boundaries.

No staging of equipment within site boundaries.

No slash piles within site boundaries.

Fuelwood Sales

No fuelwood cutting or vehicles within site boundaries -or-

Allow fuelwood cutting within sites provided that:

- no vehicles allowed within site boundaries
- no dragging of logs, trees, or cut material across or within site boundaries
- materials removed from the site are removed by hand.

Allow fuelwood cutting in areas of large, continuous, low-density artifact scatters that cover large portions of a landscape provided that:

- all features and artifact concentrations are recorded and avoided
- use of vehicles is prohibited during wet ground conditions
- periodic monitoring is used to assess impacts and if impacts are noted, fuelwood cutting will be prohibited in the area.

The Forest Archaeologists may approve additional measures to further protect sites.

APPENDIX J
SECTION III

FIRE-SENSITIVE SITES

A review of available literature on the effects on fire on cultural resources and on the experience of Forest Service heritage resource specialists and the SHPO indicates that there are two categories of fire-sensitive sites. The first consists of sites long-known to be vulnerable to the effects of even low-temperature fires and/or light fuel loads, such as sites that contain organic materials, exposed wooden architecture, etc. The second group includes sites that have generally been considered to have less risk for fire effects in most situations, including prehistoric and historic sites with deeply buried cultural deposits; prehistoric and historic artifact scatters; and prehistoric and historic sites with non-flammable surface features. However, depending on field conditions -- especially fuel loading -- as well as specific site characteristics and expected fire behavior, these other site types may be fire-sensitive in certain fuels reduction projects.

Known Fire-Sensitive Site Types in the Southwestern Region:

- Historic sites with standing, or down wooden structures or other flammable features or artifacts
- Rock art sites (depending on rock type, exposure, fuel type, and fuel loading)
- Cliff dwellings
- Prehistoric sites with flammable architectural elements and other flammable features or artifacts
- Prehistoric sites with exposed building stone of soft or porous material such as volcanic tuff
- Culturally modified trees, including aspen art and peeled/scarred trees
- Certain traditional cultural properties (based on consultation with tribes)

Other Project-Specific Fire-Sensitive Sites:

- Other sites, based on local field conditions and Forest-specific concerns
- Other sites, based on consultation with SHPO staff
- Other sites, based on consultation with fire management staff, fire behavior specialists or fire effects researchers

Forest Archaeologists will use site assessment and monitoring data, and will consult with fire management staff, to identify known and other project-specific fire-sensitive sites for individual Forests or project areas. Fire-sensitive sites officially determined ineligible for the National Register of Historic Places do not require protection under Section 106.

APPENDIX J
SECTION IV

DEFINITIONS

1. **Black Line**. A fireline created by burning the organic matter and then extinguishing the fire.

2. **Broadcast Burn**. Broadcast burning uses fire over a designated area to consume natural or activity slash that has not been piled or windrowed. Broadcast burning may be used separately or in conjunction with mechanical methods such as thinning. Broadcast burns may be ignited by hand, by "terra-torches", torches mounted on 4-wheelers or on a flat-bed truck, or with aerial ignition. Preparation for the burn may include line building, both by hand and machine.

3. **Burn Plan**. A detailed plan for conducting a prescribed burn that identifies the burn units, fire control methods, and weather condition criteria.

4. **Chipping** - In the chipping process, slash is forced through a chipping machine, reducing the larger pieces of slash to small chips that are spread over the site to be burned at a later date, or left on site to naturally decompose

5. **Crushing** - Crushing involves dragging a large drum with protruding spokes or spikes over the vegetation, effectively breaking the fuel into smaller pieces. Another form of crushing uses a "brush crusher" in which a piece of equipment similar to a "weed-whacker" is attached to a tractor. The "brush crusher" is able to reduce the height of vegetation from 4' to 6' down to 6" in height. Both of these pieces of equipment are pulled or transported by either rubber tire tractors, or rubber or metal track dozers. The "brush crusher" may operate on up to a 60% slope.

6. **Federal Fire Policy**. The *Federal Wildland Fire Management Policy* signed by the Secretaries of Agriculture and Interior following the 1994 wildfire season. The Federal Fire Policy guides and provides for the coordination of fire management activities of the of the Forest Service, National Park Service, Bureau of Indian Affairs, Bureau of Land Management, U.S. Fish and Wildlife Service and the National Biological Service.

7. **Fire Prescription**. Measurable criteria that define conditions under which a prescribed fire may be ignited, set prescriptive parameters (rate of spread, intensity, flame length, etc.), guide selection of appropriate management response, and indicate other required actions.

8. **Fireline**. A narrow, linear strip, cleared of vegetation to dirt that inhibits and/or contains the spread of fire. Firelines vary in width from one foot to over 10 feet, with most being two feet wide or less.

9. **Fuel loading**. The nature and amount of accumulated fuels which contribute to the intensity and duration of a fire.

10. **Fuelbreak**. An area adjacent to or surrounding a Wildland Urban Interface area or other protected area, where thinning and other treatments are used to substantially reduce hazardous fuels. Fuelbreaks will vary in width according to the fuel profile and topography.

11. **Hazardous Fuels Reduction**. Activities to decrease fuel loading and stand density to a manageable degree to reduce crown fires. Treatments include creation of fuelbreaks, thinning, and disposal of fuelbed materials using mechanical or non-mechanical means.

12. **Hydro-Ax And Agra-Ax** - The Hydro-ax and Agra-ax are large cutting tools attached to a "Bobcat" type tractor. They are used in the pinyon/juniper type, cutting trees off at the ground level. The trees are usually left to lay where they fall, assisting in soil retention.

13. **Inventory Standards and Accounting (IS&A) Form**. FS form (R3-FS-2300-4) which serves as the cover sheet for inventory reports and includes conditions of Section 106 compliance, such as site specific protection measures and monitoring requirements.

14. **Lopping And Scattering** - Thinned areas not piled may be "lopped" to reduce fuel slash heights and then broadcast burned. Lopping consists of cutting smaller branches off the main stem so the height of the slash layer is reduced, which in turn allows for a less intense fire if the area is broadcast burned.

15. **National Fire Plan**. The report, *Managing the Impacts of Wildfires on Communities and the Environment, A report to the President in Response to the Wildfires of 2000*, prepared by the Secretaries of Agriculture and Interior. The report calls for action and funding in five key areas: Firefighting; Restoration and Rehabilitation of Burned Areas; Hazardous Fuels Reduction; Community Assistance; and Coordination and Monitoring.

16. **Pile Burning** - Pile burning disposes of hand or machine-piled slash. Piling the slash and burning during cooler, wetter, or winter conditions reduces the chance of escape and lessens the potential for damage to the remaining vegetation on site. Piles are normally ignited by hand using fuses or drip torches.

17. **Prescribed Burn**. A prescribed fire ignited by management to meet specific objectives. A prescribed burn may involve broadcast burning over an entire area or burning of thinning slash that has been piled or windrowed.

18. **Thinning**. Thinning reduces stand density by removing stems in the understory, midstory, and overstory. Thinning actions will vary between fuelbreaks and areas surrounding fuelbreaks.

    - PRECOMMERCIAL THINNING – Pre-commercial thinning involves hand thinning of smaller diameter materials. Small material will be piled, while larger

material will be utilized for personal fuelwood or sold for commercial fuelwood. Piles will be burned in the fall and winter season and potentially during the summer if conditions become suitable. The actual piling of the material may be accomplished by hand or machine, where equipment such as dozers and small tractors will haul the material to piles. Slash is also pushed or dragged into windrows. Some slash may be "rough-piled" or "jackpot piled" where heavier concentrations of fuel are left where they fall and are burned on site.

- COMMERCIAL THINNING – Commercial thinning, accomplished through timber sales, involves larger materials. Material that is large enough for commercial thinning (merchantable timber), may be removed to a landing using a rubber-tire skidder, or tracked vehicle. Where slopes exceed 30%, tracked skidders are used more frequently because of their maneuverability. Whole tree skidding methods move the entire tree to the landing, and then remove the branches, concentrating the slash where it can be utilized as fuelwood or burned.

19. **Wetline**. A fire line using water or foam, intended to prevent the advance of fire.

20. **Wildfire**. An unwanted wildland fire.

21. **Wildland fire**. Any non-structure fire, other than prescribed fire, that occurs on undeveloped land.

22. **Wildland Urban Interface**. Those areas of resident populations of imminent risk from wildfire, and human developments having special significance. These latter areas may include critical communications sites, municipal watersheds, high voltage transmission lines, observatories, church camps, scout camps, research facilities, and other structures that, if destroyed by fire, would result in hardship to communities. These areas encompass not only the sites themselves, but also the continuous slopes and fuels that lead directly to the sites, regardless of the distance involved.

Appendix B
Project Area Maps

Figure 3: Project Area, First 4FRI EIS

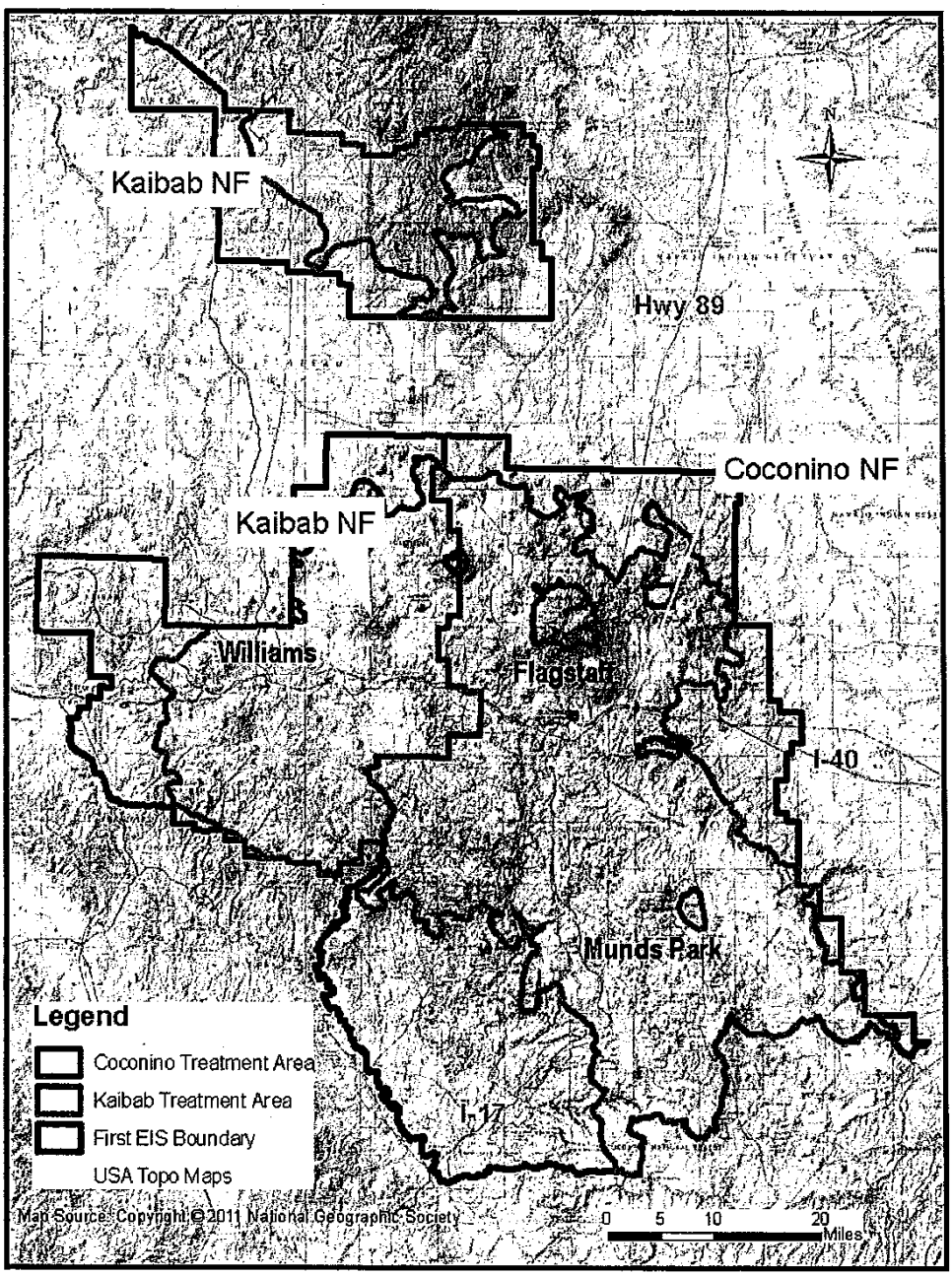


Figure 4: Previous Surveys and Fires

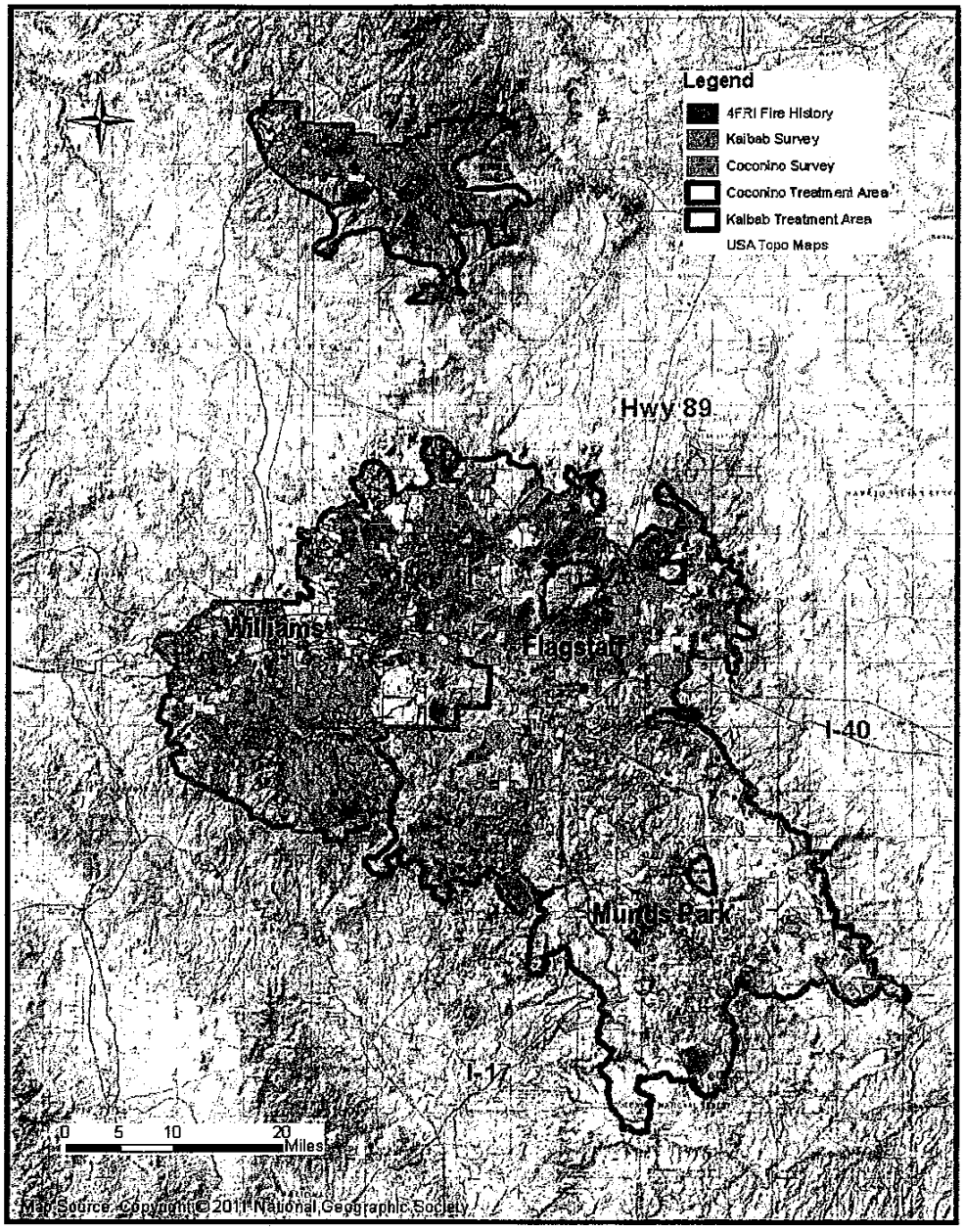
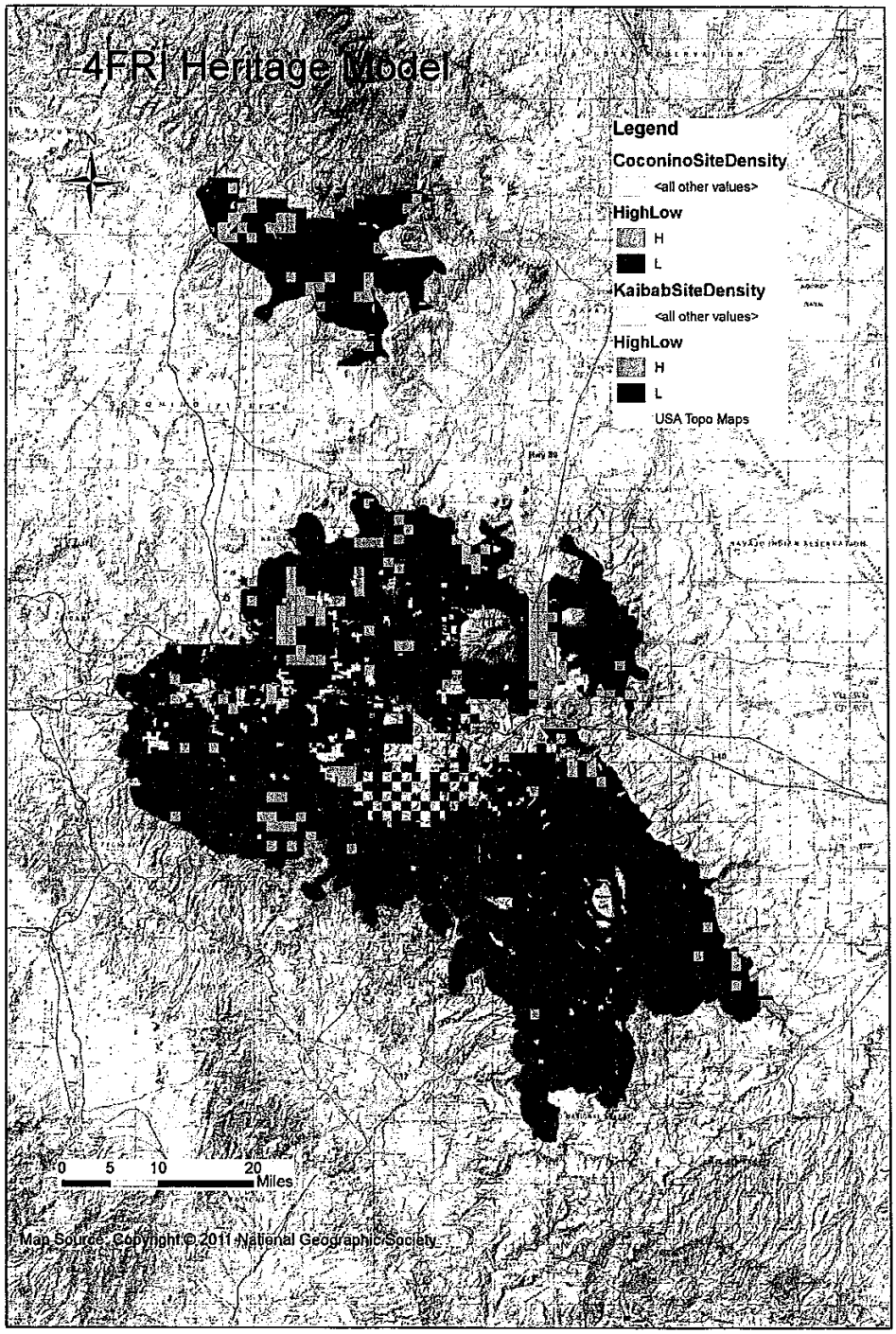


Figure 5: Heritage Site Density Model



Appendix C

Fire Effects and Heritage Resources

David J.Gifford,
Archaeologist
Flagstaff Ranger District, Coconino National Forest
Timberline Fuels Reduction, 2004 (Revised 2011)

Introduction

Proposed treatments consist of thinning and prescribed burning of the landscape to remove heavy fuel loads thus reducing the possibility of catastrophic wildfires and restoring forest health. These actions will also assist in limiting fire threats to cultural resources by removing heavy fuels, burning existing fuels, and reducing the possibility of future emergency fire suppression activities that could damage cultural resources.

Typical Heritage Protection Measures

Heritage surveys address a number of fire threats to cultural resources resulting from fuels reduction undertakings. Surface artifacts are identified and diagnostic artifacts documented by use, date, phase, and cultural affiliation. Firefighter qualified archaeologists are on site during prescribed burning in high site density areas and flag for avoidance and monitor sites before burning.

The Forest restricts burning on fire sensitive sites while allowing prescribed burning in the fire tolerant sites per current fire effects research on cultural resources: (Deal, 1999; Jackson, 1998; Rude, In Press; Ruscavage-Barz, 1999; et al). Sites are not adversely effected per guidelines in Appendix J and pre project consultation Section 106 process.

By allowing low intensity prescribed fires to burn through historically burned archaeological sites, current fuel loads resulting from fire suppression will be reduced. This treatment will prevent extensive heat damage during any future wildfire events and lower catastrophic fire threats. This process also reduces emergency fire suppression activities and the potential for ground disturbing activities like bulldozer constructed fire lines.

The following is a brief overview of fire behavior and fuels and how they relate and affect Heritage resources:

Fuel Types and Fire Behavior

Fire burns in three types of fuels: Ground (duff, humus and roots), Surface (grasses, forbs, litter, and low shrubs) and Aerial (trees, tall shrubs, snags).

Ground Fires typically have long duration burns with low temperatures. Heat penetration is low when fuel moistures (humidity) are high such as in the spring and fall. However, heat

penetration is deep during the dry summer months and can burn as high as 400° Celsius for durations of 3 to 30 hours (Ryan 2004).

Surface Fires typically burn fast and for short durations. Flame fronts in these fuel types can reach upwards of 500 to 800° Celsius in the summer months depending on continuity and loading of fuels along with temperatures, humidity, wind speed and topography (Ryan 2004).

Aerial Fires, also known as crown fires, burn rapidly consuming most fuels in the area, although some areas are missed as a result of mosaic patterning of fire based on local fire behavior. Depending on conditions (fuel loads, weather, continuity and topography) temperatures of 1000 to 1500° Celsius can be expected (Ryan 2004).

There are four basic methods of heat transfer:

A. Radiation: transfer of heat through wave action
B. Convection: transfer of heat through hot gasses and particulates
C. Conduction: transfer of heat through a substance
D. Mass Transport: physical movement of a hot object from one place to another

These transfer methods can affect cultural resources in different ways depending on resource type and fire behavior. For example, conduction would be the cause of subsurface artifacts burning along the roots of a dead tree. Mass Transport, also called spotting, could cause an historic cabin to burn a distance ahead of a fire through burning embers deposited by wind patterns. Convection and radiation may affect rock art depending on adjacent fuel types. Transfer mechanisms should be incorporated into any assessments of fire effects on cultural resources.

To predict fire effects to cultural resources the following guidelines are critical:

1. Assess expected fire behavior based on fuels, weather, temperatures, humidity, duration, etc.
2. Assess how the fire's energy is transferred: radiation, convection, conduction, and mass transport.
3. Assess how heat will affect individual cultural resources: artifact heat damage thresholds.
4. Determine the fire severity through the components of heat pulse up (radiation released above ground) and heat pulse down (conduction heat released below ground)

Methodology

Sites within the project area are inventoried per the Heritage site density model consultation requirements and identified as to site type, features and fire sensitivity. Fire sensitivity information for each site is entered into a GIS data base as a Burn or No Burn site. Prescribed fires are designed to burn at low to moderate intensities which have a no adverse effect on non fire sensitive sites.

Based on a literature search, fire management training and experience, and cultural resources protection and fire management planning training, the following information was used to develop a plan to burn through specific archaeological sites on the Forest.

1. Current research and fire modeling in Northern Arizona reports that fires have historically burned through the landscape every 2-12 years (Covington 1997, Fule 2001, Moir 2004; et al). Considering this data it is probable that most prehistoric sites in the forests of northern Arizona have burned before, probably under low to moderate intensity fires.

2 Reducing current fuel loads on archeological sites through thinning and low to moderate intensity burning activities will assure future protection from high intensity catastrophic wildfires as well as the accompanying ground disturbing suppression activities. Prescribed fires will occur in the spring and fall when temperatures are lower and humidity levels are higher, thus further reducing fire intensity and burn durations. However, if conditions are present prescribed fire can occur at any time of year.

3. Historic sites, because of associated artifacts that include wood, glass, metal and other fire intolerant materials, and the fact that these sites have not burned historically will be excluded from burning. Additionally, rock art, cliff dwellings, caves, identified TCPs with Tribal consultation, and any culturally modified trees will be protected from all burning activities per the Region 3 PA, Appendix J.

Artifact Heat Damage Thresholds

The following is a short list of artifact material types commonly found on the Coconino National Forest and temperature thresholds in Celsius where specific artifact types are negatively affected by fire.

A. Ceramics: At 600-700° ceramics are structurally changed at 700-800° clay particles destroyed, ash aggregates (Ryan 2004). At 350° organic paint peels and burns off, smoke blackening is the most common effect from fires. Thermo -luminescence is affected at 400° (Rude 2004).

B. Lithics: At 400-500° basalt fractures and at 500-600° chert shows bound water loss (Ryan 2004). Chert fractures between 350-550° (Deal 2004: 3). Obsidian hydration results can be effected at as low as 200° (Deal 2004: 4), however, this only affects surface and near surface artifacts that have probably been burned in the past and does not affect subsurface artifacts below 10 centimeters (Ruscavage-Barz 1999: 3-4).

C. Organic Material: At 200° animal hides and fibers are destroyed; 200-300° organic material is distilled; 300-400° bones char and pollen grains are destroyed; 400-500° chemical alteration begins in bone (Ryan 2004).

D. Rock art: All rock art sites should be avoided as organic paints (pictographs) can be destroyed by fire and petroglyph sites can be damaged through soot, charring and dating techniques can be affected through varnish destruction.

E. Masonry structures: Basalt spalls at 400-500° (Ryan 2004) and negative effects can occur at 200- 300° if rapid heating and cooling occur (Deal 2004: 7), such as dropping a hot rock in cold water, which is unlikely in a prescribed fire situation. It is, however, possible during wildfire suppression when aerial water drops and water applications from engines or backpack pumps are utilized. Spalled or cracked basalt structures will not affect their interpretive potential.

F. Subsurface artifacts: Studies from the 1977 La Mesa, 1988 Yellowstone, 1989 Long Mesa, and 1991 Henry fires demonstrated that subsurface artifact damage was minimal and only occurred between 0-10 centimeters and then had only minimal damage (Ruscavage-Barz 1999: 3-4). One exception occurs when stumps are located in archaeological features: fires can burn underground following dead roots down into features. In the Timberline project all stumps found in cultural features were excluded from prescribed burning activities.

Wildfire Impacts

An example of fire effects and suppression activities on cultural resources can be demonstrated through a brief examination of the 2000 Pumpkin Fire on the Kaibab and Coconino National Forests. The fire burned approximately 17,760 acres, affecting 102 archaeological sites. Most sites had minimal impacts and suppression activities were minimized by the presence of red-carded (wildland fire qualified) Forest Service archaeologists on scene. However, the following examples point out a few of the effects a wildfire can have on cultural resources (Lesko 2002):

A. One historic cabin was burned.
B. A National Register listed historic railroad camp was partially damaged through bulldozer suppression activities.
C. Fire crew mop-up actions caused some minor damage on two sites.
D. Two previously unknown sites were partially damaged during heavy equipment activities during suppression.
E. Numerous prehistoric sites were burned with only minor sherd smudging. Some fire burned into stump and root holes.

Erosion is a significant indirect impact after a wildfire (Ruscavage-Barz 1999: 6). High intensity fires eliminate organic and vegetation material and contribute to elevated levels of erosion. On the Pumpkin Fire, seven sites needed to be stabilized after the fire to prevent erosion, sheet wash, and damage from falling dead trees (McNamee 2002: 1). One site was completely scoured by runoff leaving only the masonry structure's outline on the site (Weintraub 2002: 2).

Advantages of Prescribed Burning

Controlled burning reduces impacts of post wildfire erosion on archaeological sites. Prescribed fire plans are created to minimize erosion activities and rarely burn hot enough to sterilize soils and the organic elements found in them that help stabilize those soils.

Fire behavior can be controlled during prescribed fires. A controlled head fire, in some circumstances, will cause fewer effects to ground artifact material than a backing or flanking fire because fire residence (duration) time is less (Deal 2004: 11). Firing techniques, coupled with cooler temperatures and higher humidity in the spring or fall burning season, can result in removing fuel loads while limiting fire effects to artifacts.

Wildfire effects on cultural resources are variable but prescribed fire can further reduce any adverse effects that occur during uncontrolled fire events. "Loss of analytic properties for surface artifacts may not be of concern if subsurface ceramics are available . . . " (Rude 2004: 13). By reducing high-intensity fires through prescribed burns we can protect subsurface cultural resources conceding that surface artifacts have likely been impacted in the past based on the Forest's fire history (Covington 1997, Fule 2001, Moir 2004; et al).

Project Implementation and Site Protection

Aareas with high site densities will be monitored during prescribed fire implementation by a wildland fire qualified (red-carded) archaeologist. This will ensure that fire sensitive sites will be protected and an archaeologist will be on the ground to supervise any discoveries or unforeseen circumstances that may occur.

Prescribed fires are implemented when conditions are cooler temperatures and higher humidity prevails. This practice assists with burning archaeological sites too. The lower temperatures reduce heat intensity on sites and the higher humidity levels reduce fire intensity and duration. By burning during cooler periods of the year, the resident time (duration) that heat exists on a site will also be reduced thus limiting heat intensity and duff penetration.

Fire intolerant sites will be excluded from all fire activities and protected during implementation. The project will be implemented in stages. When a burn unit is slated for implementation, the project archaeologist will mark sites to be excluded with pink flagging and white paint. At that time, the necessary protection measures will be determined by fire professionals and may include hand or drag lining the site, wet lines, foam etc. These sites will be monitored by the project archaeologist.

Some fire intolerant sites may be hand thinned to reduce fuel loading before burning. However, this is a very expensive undertaking and only select sites will be thinned. No sites in the project area will be thinned using mechanical equipment. If enough of the fire tolerant sites and surrounding areas can be treated (burned and/or thinned), the fire threat will decrease dramatically and the untreated fire intolerant sites will be protected through their proximity to treated areas.

According to prescribed burn fuel models, burn units typically do not exceed the 400 degrees Celsius level with most units burning at or around 260 degrees Celsius or less.

Conclusion

With controlled fires we can reduce heat duration and implement cooler fire temperatures on archaeological sites and reduce the need for future mechanical suppression activities. Completing prescribed burns will also imitate the historic fire regime of the American Southwest, an environment in which prehistoric archaeological sites have survived for hundreds of years.

These recommendations were made in a study on the effects of fire on cultural resources by the U.S. Army Corps of Engineers in 1989. There is much more data today to support their contention.

1. Hot, wild and controlled fires are potentially harmful to cultural resources with effects ranging from exfoliation of cliff faces to dramatic alteration of artifact composition, form and color.
2. Fires with cool combustion temperatures can avoid significant impacts to archaeological sites and artifacts.
3. Controlled burns designed with cool combustion can avoid significant impacts to archaeological sites and artifacts.
4. Controlled burns can be effectively used to control vegetation on archaeological sites without damage to cultural resources

Archaeological sites on the Forest will eventually burn: the Coconino National Forest has approximately 500 fire starts per year. With an unnatural fuel load throughout the Forest it is only a matter of time before these sites burn. The question is, do we burn them in a controlled, low to moderate intensity prescribed burn, or wait for an uncontrolled, high intensity wildfire that will require emergency suppression and all of the associated problems those actions incur? Finally, emergency wildfire suppression is exempt from Section 106 of the National Historic Preservation Act; controlled burns are not.

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Appendix D
4FRI Model Development Process and Metadata

Supporting Four Forest Restoration Initiative (4FRI) Planning Efforts by Determining Potential Heritage Survey Acres: Coconino and Kaibab National Forests

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March 28, 2011

Introduction

To assist with planning efforts for the Four Forest Restoration Initiative (4FRI) project, Regional Archaeologist, David Johnson, proposed to identify areas of low and high site densities that could be used to implement archaeological survey approaches in Appendix J in the USFS Southwestern Region's Programmatic Agreement (USFS 2010). Creating these classes will help determine potential survey needs within the 4FRI project area. Following Johnson's recommendations, Dave Gifford, 4FRI Heritage Resource Team Lead, initiated the process to create models by, among other things, contacting me to discuss how to use Geographic Information Systems (GIS) to create these models.

In the past, I had developed a heritage resource density model in support of the Coconino National Forest's Travel Management Rule planning efforts. After a brief conversation with Gifford, I agreed to help develop the models. Gifford then planned a meeting to work with Dave Johnson and the Heritage Resource Units from each Forest to work out the details of the models.

Together we developed three density models to assist with planning efforts. These models are at the landscape scale and, therefore, are most applicable at that level. When specific treatment areas are developed, these models will be one tool archaeologists can use to plan project specific survey strategies. The models do not predict specific site locations; the intent is to determine relative gross densities to estimate survey time and survey cost.

Framing the Models

On February 4th, 2011, Gifford, Johnson, and I met with the following archaeologists: from the Coconino - Jeremy Haines, Peaks Ranger District Archaeologist; Craig Johnson, Supervisor's Office, Tribal Relations: from the Kaibab - Margaret Hangan, Forest Archaeologist; Mike Lyndon, Supervisor's Office, Assistant Forest Archaeologist/Tribal Relations, Neil Weintraub, South Zone, Archaeologist; and Erin Woodard, Assistant South Zone Archaeologist. The objective of the meeting was to lay the ground-work for developing the models.

It was decided early on that each model would be specific to each Forest, but the techniques, methods, and data needed to be consistent. The goal of the models was to generate the number of surveyed and unsurveyed acres in low and high site densitiy areas. These acre totals can then be used to help determine the cost of archaeological survey for the project. To realize this goal the group had to agree on how to determine site density.

The group agreed to entertain three lenses to explore the data: Terrestrial Ecological Units (TEU), Square-mile Grid, and Sites in Survey. One or a combination of each method could be used to draw the line between low and high density.

The Model

The model has several assumptions: sites are on the ground, sometimes closer and sometime further apart, and GIS can help us identify these patterns. The only contingent assumption is why are sites sometimes closer together and sometimes further apart?

Three models were examined 1) Terrestrial Ecological Units (TEU), 2) Square-mile Grid, and 3) Sites in Survey Density.

Terrestrial Ecological Unit Method

In the past, I have used Terrestrial Ecological Units (TEU) to explore the relationship of archaeological sites to the land. I like TEU because of the amount of descriptive information about each unit. TEU describes ecological characteristics of the land. A variety of specialists in soils, watershed, vegetation etc. developed TEU for each Forest. While there are similarities between the two Forests, there are also differences. In order to make the data sets more compatible, 4FRI team members and employees from the Southwestern Regional Office (both of the ecological variety) aggregated the TEU for both Forests (2010 Brewer et al). It is important to note that the aggregated TEU do not encompass the entirety of the Forests, only the higher elevation areas comprising the 4FRI project area, which typically is lower site density.

To create the TEU site density model, I first identified which sites[1] were within the analysis area. For this model I only used site points. For the Kaibab, which does not, by and large, use points for sites, I converted their site polygons to points, or in GIS speak, centroids. I then needed to identify which TEU had adequate survey coverage to be statistically acceptable, greater than or equal to 20 percent survey. To do this I had to buffer linear survey to make them polygons, then create a union (a union combines two things into one, retaining both the spatial and tabular data of the two parts) between the linear polygons to the polygon survey. With the two now put together (I will call that All Survey) I had to dissolve All Survey to remove overlapping survey areas.

In the next step, I intersected (intersections only combine shared areas) the TEU and All Survey. I then used field calculator (analogous to using formulas in Excel) to determine which TEU had greater than or equal to more that 20 percent survey. With the survey sample identified, I then

[1] I did not exclude historic sites from this analysis.

selected only those TEU areas greater than or equal to 20 percent survey and selected only the sites that fell within those areas. With those sites selected, I performed a spatial join of the selected sites to the selected areas. A spatial join allows us to identify how many sites are within each TEU. With the spatial join complete, I was able to export the table to Excel to finish the analysis.

To this point all of the analysis was in acres. In Excel, I shifted from acres to square miles. Excel is also where we finally begin to arrive at site densities. Archaeological site density is based on the predicted number of sites per square mile for each aggregated TEU. The number of sites recorded within each TEU, divided by the total acres archaeologists have physically examined within each TEU, estimates the number of sites per acre. This figure, multiplied by 640 (the number of acres within a square mile), provides the estimated number of sites per square mile within the TEU. I performed these calculations for each Forest and created a site density distribution graph for each Forest.

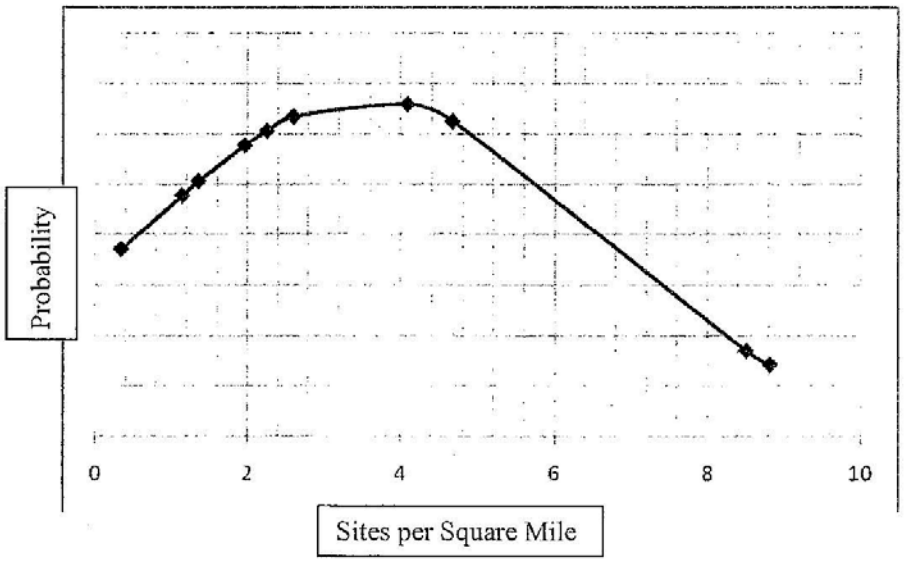

Figure 1. Coconino NF Site Density by Aggregated TEU

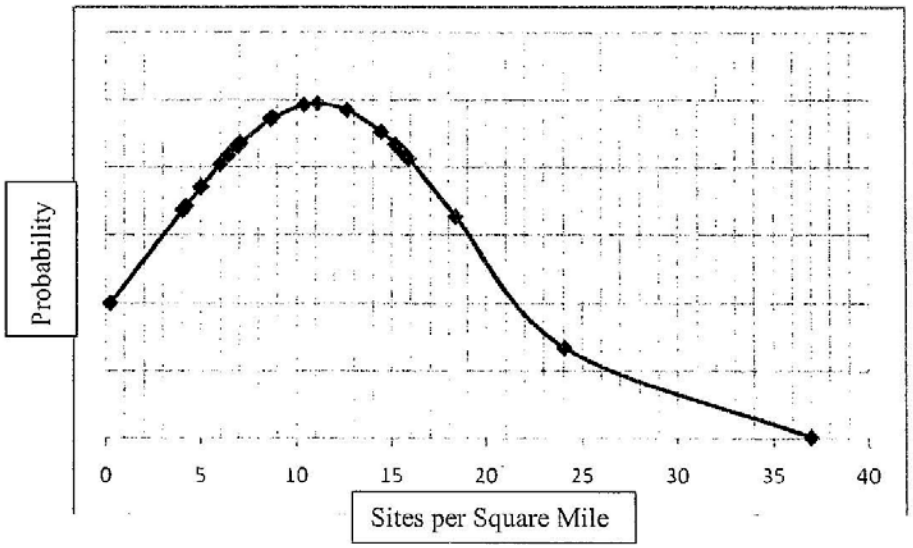

Figure 2. Kaibab NF Site Density by Aggregated TEU

These tables told us that within the TEU on the Coconino, site density ranged from 1–9 sites per square mile with an average density of 4 sites per square mile, and on the Kaibab, density ranged from 4 – 37 sites per square mile with an average of 11 sites per square mile.

Square-mile Grid Method

The Square-mile grid assesses density based on a one square-mile by one square-mile grid across the Forest. This is a less assuming way to develop densities; density is high where they are high and low where low, without necessarily having to tether the reason to any other factors. The techniques I used in this model were almost identical to those steps in the TEU model. The only real difference was that I used a square-mile grid that spanned each Forest.

This model then accounts for more acres that the TEU as the TEU aggregation targeted forested lands. In this model only square-mile grids that had greater than or equal to 20-percent survey were included in the analysis. Then, only the area within each grid that was surveyed was used to determine site density. For example, if a square-mile had 400 survey acres and 20 sites in those survey acres, the density for that grid would be 20 sites/400 acres for 0.05 sites/acre or 32 sites/square mile (20/400=0.05x640=32.) The geoprocessing steps were the same, identify the sites, find areas that had greater than or equal to 20-percent survey, find the number of sites within those areas, spatially join the two, export the join to Excel, determine density, and make sure units were converted to square miles. I then graphed the results:

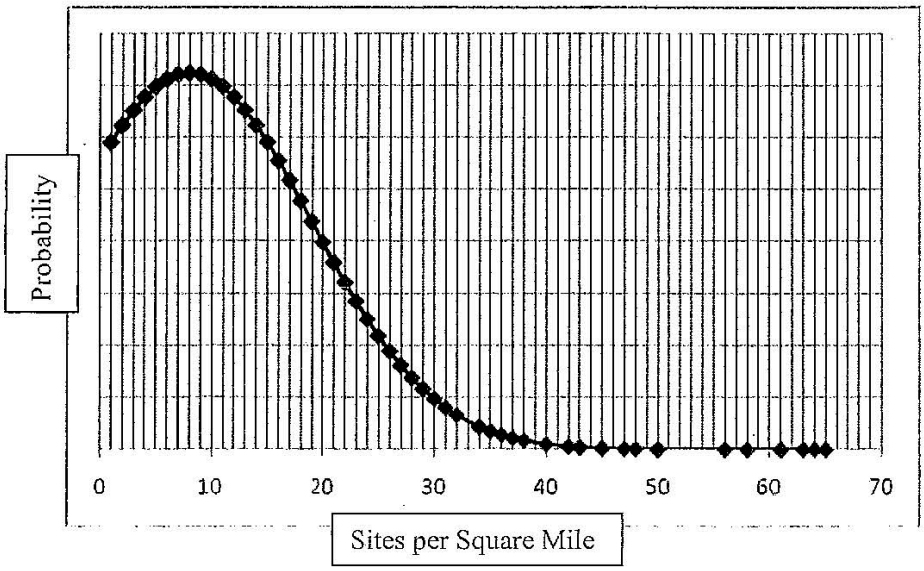

Figure 3. Coconino NF Site Density by Square-mile Grid

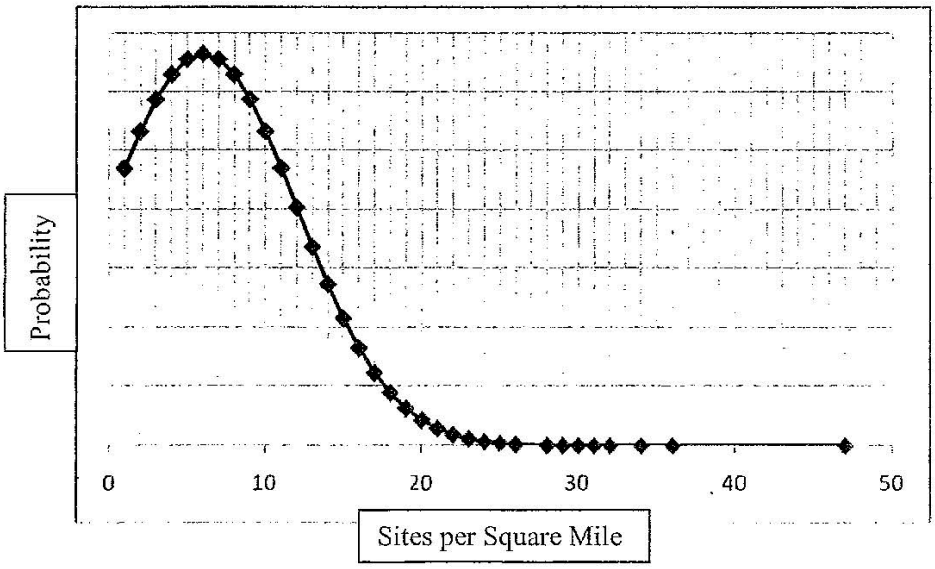

Figure 4. Kaibab NF Site Density by Square-mile Grid

These tables show us that within the square-mile grid on the Coconino, site density ranged from 1–66 sites per square mile with an average density of 8 sites per square mile, and on the Kaibab, density ranged from 4 – 47 sites per square mile with an average of 6 sites per square mile.

Sites in Survey Model

Sites in Survey arrives at density based on survey. This method, like the Square-mile Grid, is more unassuming and narrower in scope as only areas that have been surveyed are considered.

In this model the only relationship explored is that between sites and within completely surveyed acres. Arriving at site density uses the same calculations.

Total Acres Surveyed	Sites in Survey	Average Sites/Sq Mile
323,296	5,023	10

Table 1. Coconino NF Site Density by Sites in Survey

Total Acres Surveyed	Sites in Survey	Average Sites/Sq Mile
513,966	7,782	10

Table 2. Kaibab NF Site Density by Sites in Survey

Determining Site Density

With the three approaches at hand, each Forest reviewed the data and determined where to draw the line dividing low versus high site density. During a meeting I attended with Gifford, Haines, and Peter Pilles, Forest Archaeologist, on February 11, 2011 they decided that low site density ranged from 0 – 7 and high site density ranged from 8 – 66. They felt the TEU model was a bit too low, given that it focused on an area with traditionally lower site densities and that the Sites in Survey was a bit on the high side. They elected to use the average from the Square-mile Grid model.

The Kaibab set their low density from 0–9 and high ranged from 10–47. Weintraub, Lyndon, and Hangan felt that the Square-mile Grid figure was too low, 6 sites per square mile. They thought that data outliers were driving down the average of the Square-mile Grid. They felt that the TEU Model and Sites in Survey was closer to the actual density on the Kaibab.

Using Density to Determine Acres

With densities established for each Forest, I was able to begin the process of calculating low and high site density acres. I decided to use the square-mile grid that I created to classify into the low and high categories. I opted to use a grid as it did not visually skew site density as the aggregated TEU did. When I used the TEU, certain areas were showing up with a high site density because they were lumped with other areas that did actually have a high site density. The logical solution was to classify the grid into high and low categories.

Once I made the categories, I removed all non-Forest Service land-holdings (e.g., Private, State, etc.) to make the acreage calculations more accurate, and created tables that show survey and unsurveyed areas of low and high site density for each Forest.

Survey Acres in 4FRI Boundary: Coconino NF

	Acres		
Acres in 4FRI*	817,151		* FS Ownership Only
Survey Acres in 4FRI	321,433	39%	surveyed

Table 3. Survey Acres in 4FRI Boundary: Coconino NF

Survey Projections Based On Density: Coconino NF

	Acres
High Site Density	43,601
Unsurveyed	13,598
Surveyed	30,003
Low Site Density	773,550
Unsurveyed	631,034
Surveyed	142,516
Total	817,151

3,395 Total Point Sites within 4FRI Boundary

Table 4. Low/High Site Density: Coconino NF

Table 4 can be used to calculate the potential number of survey acres needed on the Coconino. Projects in the unsurveyed high density areas will require 100% survey for a potential total of 13,598. Projects in the unsurveyed low density areas could have up to 25% survey for a potential total of 157,758 acres. These numbers are the upper-end and are useful to estimate the high-end acres, 13,598 + 157,758 = 171,356, and cost for survey in the 4FRI project area. This is the high-end and could be lower depending on where projects are located.

Survey Acres in 4FRI Boundary: Kaibab NF

	Acres		
Acres in 4FRI*	530,187		* FS Ownership Only
Survey Acres in 4FRI	245,386	46%	surveyed

Table 5. Survey Acres in 4FRI Boundary: Kaibab NF

Survey Projections Based On Density: Kaibab NF

	Acres
High Site Density	54,698
Unsurveyed	13,383
Surveyed	41,315
Low Site Density	475,489
Unsurveyed	276,017
Surveyed	199,472
	530,186

3,176 Total Point Sites within 4FRI Boundary

Table 6. Low/High Site Density: Kaibab NF

Table 5 can be used to determine the number of survey acres needed on the Kaibab. Projects in the unsurveyed high density areas will require 100% survey for a potential total of 13,383 acres. Projects in the unsurveyed low density areas could have up to 25% survey for a potential total of 69,900. These numbers are the upper-end and are useful to estimate the high-end acres, 13,383 + 69,900 = 83,283 acres, and costs for survey in the 4FRI project area. This is the high-end and could be lower depending on where projects are located. .

Summary

To recap, I worked with archaeologists from the Coconino and Kaibab National Forests and with the Southwest Regional Archaeologist. Together we developed three models to determine the best way to identify high and low site densities for each Forest. Once the densities were created, I was able to calculate potential survey acreages for each Forest.

As this project progresses, it is important for those involved in planning and actual field work to periodically reflect on these models to see if they meet their intended objective. Specifically, I would find it of interest to determine if TEU could be aggregated to help identify trends and patterns in archaeological sites. This aggregation would be specific to the relationship between archaeological patterns and TEU. In order to develop an archaeologically based aggregation, the following steps would need to be performed.

1) Explore the relationship between the site types and the TEU. It would be advisable to analyze historic and prehistoric sites separately. This could be as simple as how many site types are within each TEU.
2) Once patterns are identified, one would need to become familiar with TEU in order to understand the specific environmental characteristics of each unit.
3) Then with an understanding of the TEU, archaeologists could begin to aggregate TEUs based on archaeological site patterning.

Appendix C: Programmatic Agreement

FIRST AMENDED PROGRAMMATIC AGREEMENT
REGARDING HISTORIC PROPERTY PROTECTION AND RESPONSIBILITIES
AMONG
NEW MEXICO HISTORIC PRESERVATION OFFICER
AND
ARIZONA STATE HISTORIC PRESERVATION OFFICER
AND
TEXAS STATE HISTORIC PRESERVATION OFFICER
AND
OKLAHOMA STATE HISTORIC PRESERVATION OFFICER
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
AND
UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE REGION 3

WHEREAS, United States Department of Agriculture, Forest Service, Region 3, (FS) manages the resources of eleven National Forests in Arizona, New Mexico, Oklahoma, and Texas; and

WHEREAS, the FS has determined that many of its management activities are federal undertakings, pursuant to the National Historic Preservation Act (NHPA) of 1966, that may affect properties included in or eligible for inclusion in the National Register of Historic Places; and

WHEREAS, the FS has consulted with the Advisory Council on Historic Preservation (Council) and the State Historic Preservation Officers (SHPO) of the States of Arizona, New Mexico, Oklahoma, and Texas pursuant to section 800.14(b) of 36 CFR 800, the regulations implementing Section 106 of NHPA as amended (16 USC 470f), and Section 110f of the same statute; and

WHEREAS, in the development of this Agreement, the FS has consulted Federally-recognized Indian tribes with cultural affinity to historic properties in Region 3, pursuant to 36 CFR 800.2(c)(3) and 36 CFR 800.14(f), and has consulted other interested parties;

and

WHEREAS, this Agreement fully supersedes all provisions of the 1990 *Programmatic Agreement Regarding Cultural Property Protection and Responsibilities Among New Mexico Historic Preservation Division and Arizona State Historic Preservation Office, Oklahoma State Historic Preservation Office, Texas State Historic Preservation Office, and The Advisory Council on Historic Preservation and United States Department of Agriculture Forest Service Region 3* whose parties agree to this amendment; and

WHEREAS, this Agreement does not affect other national Programmatic Agreements between the Forest Service, Council, and National Conference of State Historic Preservation Officers and does not affect Region 3's 2001 *Programmatic Agreement Among USDA Forest Service, Southwestern Region and Arizona State Historic Preservation Officer and New Mexico State Historic Preservation Officer and Advisory Council on Historic Preservation Regarding Wildland Urban Interface Hazardous Fuels Reduction Projects*,

WHEREAS, the consulting parties share a common desire to develop a flexible, programmatic approach for implementing Section 106 of NHPA that will satisfactorily take into account the effects of FS undertakings on historic properties, provide for appropriate tribal consultation and public participation, minimize redundant documentation, and reduce the need for case-by-case review of routine land management activities when historic properties will not be affected or when standard protocols and treatments can be applied.

NOW THEREFORE, the FS, the Council and the SHPOs agree that the FS shall administer its activities subject to Section 106 of the National Historic Preservation Act in accordance with the following stipulations:

Stipulations

I. Management of Historic Properties

A. The FS shall continue to preserve and foster appreciation for the historic properties it manages through implementation of the Forest Service's National heritage strategy (*Heritage: It's About Time, A National Strategy, 1999)* and its objectives: to protect and preserve significant historic properties; to share their values with the American people; and to contribute relevant information and historical perspectives to natural resource management.

B**.** The FS shall utilize the greater flexibility and efficiencies provided by this Agreement, with respect to Section 106 of NHPA, to further the implementation of Section 110, including non-project inventory, National Register evaluations and nominations, site inspections and monitoring, site stabilization and maintenance, public interpretation and

outreach, and analysis and synthesis of what is being learned about the prehistory and history forest lands, including development and update of heritage and ethnographic overviews.

C. Individual National Forests in Region 3 are encouraged to develop or update Forest heritage resource management plans in response to E.O. 13287 (Preserve America) and the Forest Plan revision process. Such plans should describe each Forest's proposed approach, priorities, and schedule for achieving measurable progress in meeting the FS Heritage Strategy, E.O. 13287, and Section 110 goals identified pursuant to Stipulation I.B. Recommended topics include: heritage resource identification, evaluation, nomination, condition, protection, maintenance, use, research interpretation, consultation , public outreach, and community partnerships/heritage tourism opportunities. Forests should consult with the SHPO of the affected state and Indian tribes that may ascribe traditional cultural and religious significance to affected properties in developing and finalizing heritage resource management plans.

D. The FS shall continue to manage historic properties in accordance with the direction in Forest Land Management Plans and in conformance with the standards in the Region 3 Manual Supplement (FSM 2361) and Handbook (FSH 2309.2). Copies of any proposed amendments to the manual and handbook will be forwarded to the SHPOs of the affected states, the Council, and to interested tribes if the amendment has the potential to affect properties of interest to them. These parties will be provided a minimum of 30 calendar days to comment on proposed changes. Any objections provided to the FS within the review period will be addressed in accordance with Stipulation XII.

II. Public Participation

A. The FS shall seek and consider the views of the public in a manner that reflects the nature and complexity of each undertaking and its potential effects on historic properties and the likely interest of the public in the effects on historic properties. The FS shall use its procedures for public involvement under the National Environmental Policy Act (NEPA) to solicit information and concerns about historic properties from members of the public. The FS will ensure that an appropriate level of public involvement is provided, in accordance with 36 CFR 800.2(d)(3). The FS will ensure that environmental documents include information on historic properties that will be affected by the proposed action and alternatives, consistent with Section 304 of NHPA and Section 9 of the Archaeological Resources Protection Act (ARPA).

B. The FS shall ensure public access to findings made pursuant to this Agreement, consistent with Section 304 of NHPA and Section 9 of ARPA, and will consider comments or objections by members of the public in a timely manner.

III. Tribal Consultation

A. In accordance with Section 101(d)(6)(B) and Section 110 of NHPA, the FS shall consult with Indian tribes that attach traditional religious and cultural significance to historic properties

that may be affected by FS undertakings. The FS shall use the principles in the USDA Forest Service policy, *Consultation with American Indian and Alaska Native Tribes* (FSM 1563.06) to guide its tribal consultation procedures and relationships. This policy underscores the unique legal and political relationship the United States Government has with federally-recognized Indian tribes, including trust responsibilities, government-to-government relationships, consultation responsibilities (E.O. 13175, "Consultation and Coordination with Indian Tribal Governments") and protection of sacred sites (E.O. 13007, "Indian Sacred Sites").

B. As early as possible in the planning process, but no later than the identification stage, the FS shall consult with Indian tribes to determine if any historic properties of traditional cultural or religious significance are present within an undertaking's area of potential effect. The FS shall ensure that Indian tribes receive quarterly NEPA lists of proposed actions and that Indian tribes are maintained on NEPA mailing lists. In addition, the FS shall utilize periodic meetings, supplemental project lists, and project-specific consultation requests as needed to assure that Indian tribes have the opportunity to identify historic property concerns and to participate as consulting parties in all aspects of consultation for projects that are of interest to them.

C. When it is determined that an undertaking may affect a property identified by a Tribe as having traditional cultural or religious significance, the FS shall consult further with the Tribe regarding the identification, evaluation, assessment of effects, and the resolution of adverse effects, if applicable, with respect to the property.

D. Indian tribes contacted and tribal concerns and recommendations derived from the consultation process shall be documented and addressed in the inventory report and NEPA project file, consistent with the confidentiality considerations in III.G.

E. In accordance with 36 CFR 800.2(c)(ii)(E), Forests are encouraged to develop consultation Memoranda of Understanding (MOU) with Indian tribes. Such MOUs will recognize government-to-government relationships and will specify how individual Indian tribes wish to be consulted in the Section 106 process. Copies of signed MOUs will be provided to the SHPOs in the affected states and the Council.

F. The FS will coordinate tribal consultation under this Agreement with its consultation responsibilities under other statutes, including the Native American Graves Protection and Repatriation Act (NAGPRA) and ARPA.

G. The FS shall be sensitive to tribal concerns and rights regarding confidentiality and privacy and shall protect sensitive information to the fullest extent permitted by law, using applicable provisions and exemptions of Section 304 of NHPA, Section 9 of ARPA, and Section (b) of the Freedom of Information Act.

H. The FS does not conduct undertakings on tribal lands; however if the FS determines that one of its undertakings may affect historic properties on tribal lands, and the tribe has assumed

the responsibilities of the SHPO under Section 101(d)(2) of NHPA, the FS shall consult with the Tribal Historic Preservation Officer in accordance with 36 CFR 800.2(c)(2)(A) regarding effects on those properties and shall follow the consultation procedures in 36 CFR 800 rather than the procedures in this Agreement.

IV. Programmatic Consultation

A. Undertakings Subject to Consultation

1. Standard Consultation. The FS shall carry out the review requirements of this Agreement on all classes of undertakings that have the potential to affect historic properties and are not specifically exempted from standard review pursuant to Stipulations IV.A.2, 3, 4 and 5. Appendix A, Section I, includes examples of undertakings that require case-by-case review. This list is not exhaustive and may be revised or updated as needed by mutual written agreement of the FS and the SHPOs.

2. Exemptions. Those categories of undertakings listed in Appendix A, Section II,are exempt from further review or consultation. These include categories of undertakings for which the potential effects on historic properties are foreseeable and likely to be minimal. Appendix A Section II may be revised or updated as needed by mutual written agreement of the FS and the SHPOs. This will include consultation with Indian tribes if the proposed exemptions have the potential to affect properties of traditional cultural and religious significance. A Forest may elect to consult on an otherwise exempt undertaking.

3. Screened Exemptions. Undertakings listed in Appendix A, Section III, will be reviewed by the Forest Archaeologist to determine if they have the potential to affect historic properties. If not, they shall be exempt from further review. If the Forest Archaeologist determines that a particular undertaking, because of its nature or location, has the potential to affect historic properties, that undertaking shall not be considered exempt but shall be subject to the review requirements of Stipulation V. Appendix A (III) may be revised or updated as needed by mutual written agreement of the FS and all signatory SHPOs.

4. Standard Consultation Protocols. The FS, in consultation with SHPOs and the Council, may develop standard consultation protocols for certain classes of undertakings where effects on historic properties and resulting protection and treatment measures are similar and repetitive. In such consultation protocols, the FS shall consult with Indian tribes if the proposed protocol has the potential to affect properties of interest to them, and with other parties that have a demonstrated interest in the class of undertakings or historic properties. Such protocols will specify procedures for the identification, evaluation, and treatment of historic properties with respect to Section 106. Upon mutual written agreement by the FS, the SHPOs of the affected state(s), and Council, such protocols shall be appended to this Agreement and may be followed in lieu of standard case-by-case consultation for the specified class of undertakings. Appendix D contains a Standard Consultation Protocol for Bark Beetle Infestation Projects on

Arizona National Forests.

Within 90 days of execution of the Agreement by the Council, the FS shall initiate and diligently pursue development of a standard consultation protocol for fence construction and road maintenance projects on National Forests in New Mexico. The FS will consult with the New Mexico SHPO, the Council, interested Indian tribes, and other interested parties and will make every effort to reach agreement on the protocol and append it to this Agreement by October 1, 2004.

5. Standard Treatments. The FS, in consultation with SHPOs and the Council, may develop standard treatment or mitigation measures for certain classes of undertakings where effects on historic properties are similar and repetitive. In such treatment protocols, the FS shall consult with Indian tribes if the proposed treatment has the potential to affect properties of interest to them, and with other parties that have a demonstrated interest in the class of historic properties. Upon mutual written agreement by the FS, the SHPO(s) of the affected state(s), and Council, such standard treatments shall be appended to this Agreement and may be followed in lieu of standard case-by-case consultation for the specified class of undertakings or properties.

6. Emergency Situations. The FS will follow the procedures in 36 CFR 800.12 in responding to emergency situations unless a standard consultation protocol has been developed pursuant to Stipulation IV.A.4.

B. Land Management Planning

The FS will continue to afford the SHPO, Council, Indian tribes, and interested organizations and individuals, as appropriate, an opportunity to provide input during development of land management planning documents developed under the National Environmental Policy Act (NEPA) pursuant to 40 USC 1500. The FS shall consult under this Agreement regarding any plans that authorize on-the-ground activities that have the potential to affect historic properties.

V. Consultation Procedures

For undertakings not exempt from standard review pursuant to Stipulations IV.A. 2, 3, 4 or 5, above, the FS shall complete the following steps. Where appropriate these steps will be carried out in consultation with Indian tribes and other consulting parties identified in consultation with the SHPO with jurisdiction.

A. Project Planning and Decisions. The FS will ensure that Section 106 consultation is completed prior to making a final decision to approve a proposed action. To the maximum extent possible, this process will be completed at the earliest stage of planning or decision-making.

B. Determination of Area of Potential Effect

The FS shall determine an undertaking's area of potential effect taking into consideration any

information provided by Indian tribes, the SHPO(s), other consulting parties, and the public. If any question exists as to an undertaking's area of potential effect, the FS shall consult the SHPO in making this determination. The FS will consider the direct, indirect, and cumulative impacts that an undertaking may have on historic properties in the area of potential effect. The FS will consider the potential effects an undertaking may have on historic properties located on federal and non-federal land, taking into consideration the scale and nature of the undertaking, the extent of federal involvement, and the nature and extent of potential effects on historic properties.

C. Determination of Appropriate Level of Identification Efforts.

1. When the FS proposes to perform a 100% (Complete) inventory of an undertaking's area of potential effect, no consultation with the SHPO regarding the level of inventory or extent of survey will be required.

2. Based upon existing inventory information, the FS may determine that further inventory will not be necessary for the area of potential effect if a 100% inventory has previously been performed and if the fieldwork and report are consistent with current professional standards. Inventories more than ten years old will be evaluated and considered for re-examination if they do not reflect current standards and knowledge levels. The FS will provide references to prior reports and will document a decision not to conduct further inventory.

3. When the FS proposes to perform a less than 100% inventory of the area of potential effect, the SHPO will be given an opportunity to comment on the proposed level, extent, and design of inventory. The SHPO will respond within 15 calendar days of receipt of the FS's sample inventory design. The FS will address SHPO comments in making a final determination of the design of the inventory. Alternatively, a Forest may opt to develop a Forest-wide inventory strategy or an inventory strategy for certain classes of undertakings in consultation with the SHPO. Once an inventory strategy has been approved by the SHPO(s) of the affected state(s), the FS may apply that strategy to applicable undertakings without prior consultation with the SHPO.

4. The Forest Archaeologist or FS professional cultural resource specialist with delegated report review responsibilities shall ensure that all identification activities and inventory reports reasonably conform to the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44720-44723) and meet FS guidelines and any guidelines mutually agreed to with the SHPO(s).

D. Determination of Eligibility

1. Cultural materials that do not meet the site definition contained in the Region 3 Handbook (FSH 2309.24) will be recorded as isolated occurrences. Isolated occurrences will not be evaluated as historic properties under these procedures and will not constrain management of

the location where they were found. Isolated occurrences will be recorded in a manner consistent with Forest procedures.

2. The FS and the SHPOs agree that certain classes of properties (Appendix B) may be determined eligible for the National Register of Historic Places for Section 106 purposes based on survey information without further case-by-case SHPO consultation and concurrence. Appendix B may be revised or updated as needed by mutual written agreement among the FS and the SHPOs.

3. The FS shall ensure that properties that will be affected by an undertaking are evaluated conclusively for eligibility for inclusion in the National Register by applying the National Register criteria (36 CFR 63) in consultation with the SHPO and any Indian tribe that attaches religious and cultural significance to the properties. Forests are encouraged to make eligibility determinations for other properties in consultation with the SHPO when possible; however, the eligibility of a property may remain unresolved, provided it is treated as eligible and the property will not be affected by the undertaking.

4. If the FS and SHPO with jurisdiction cannot agree on the eligibility of a property, or if the Council so requests, the FS will obtain a formal determination of eligibility from the Keeper of the National Register, whose decision shall be final.

E. Determination of Effect

1. No properties. When the agreed-upon level of inventory is completed and no properties are present in the area of potential effect, the FS shall document a finding of "no historic properties affected". Except as specified in Stipulations V.E.6 and E.7, the undertaking may proceed following approval of the inventory report by the Forest Archaeologist or other authorized FS professional cultural resource specialist and approval of the undertaking by the Forest Supervisor. Inventory documentation will be provided to the SHPO as follows: Arizona, annual listing; New Mexico, transmittal of inventory reports and associated documentation within 30 calendar days; Oklahoma, annual listing; and Texas, annual listing. This submittal schedule may be amended by written agreement between the FS and individual SHPOs. Such agreements once signed shall be appended to and made part of this Agreement and shall supercede the schedule detailed in this paragraph. Copies of the inventory reports will also be available for inspection by Indian tribes and by the public, consistent with the provisions of Section 304 of NHPA and Section 9 of ARPA

2. Properties present, but not affected. When the agreed upon level of inventory is completed and eligible or unevaluated properties are present in the area of potential effect, and the FS determines that the undertaking will not have an effect on any such properties, the FS shall document a finding of "no historic properties affected". Except as specified in Stipulations V.E.6 and E.7, the undertaking may proceed following approval of the inventory report by the Forest Archaeologist or other authorized FS professional cultural resource specialist and

approval of the undertaking by the Forest Supervisor. Inventory documentation will be provided to the SHPO as follows: Arizona, annual listing; New Mexico, transmittal of inventory reports and associated documentation within 30 calendar days; Oklahoma, transmittal within 30 calendar days; Texas, transmittal within 30 calendar days. This submittal schedule may be amended by written agreement between the FS and individual SHPOs. Such agreements once signed shall be appended to and made part of this Agreement and shall supercede the schedule detailed in this paragraph. Copies of the inventory reports will also be available for inspection by Indian tribes and by the public, consistent with the provisions of Section 304 of NHPA and Section 9 of ARPA

3. The SHPOs may review a sample of undertakings covered by Stipulations V.E.1 and E.2 and may report the results of such monitoring at the annual meeting or in an annual report to the FS. If problems are found, the SHPO will present recommendations which the FS will consider implementing the following year.

4. No adverse effect. When the FS determines that one or more historic properties may be affected by an undertaking it will apply the criteria of adverse effect from the Council's regulations (36 CFR 800.5[a]) to determine if the effect will be adverse. If the effect will not be adverse, the FS shall provide the inventory documentation and proposed "no adverse effect" finding to the SHPO and other consulting parties. The SHPO shall have 30 days from receipt to review the finding. If the SHPO agrees with the finding the FS may proceed with the undertaking in accordance with the proposed conditions or treatment measures. If the SHPO fails to respond within the 30-day review period, the FS may proceed with the undertaking in accordance with the proposed conditions or treatment measures provided there are no unresolved objections from other consulting parties. If the SHPO objects and the objection cannot be resolved, or if the SHPO fails to respond and unresolved objections from other consulting parties exist, the FS shall seek the views of the Council to resolve the objection.

5. Adverse effect. If the FS finds, in consultation with the SHPO that the undertaking will have an "adverse effect" on historic properties, the FS shall notify the Council as specified in Section VII and shall resolve adverse effects following the procedures in 36 CFR 800.6 or any applicable standard treatment or standard consultation protocol developed pursuant to Stipulations IV.A.4 or IV.A.5 of this Agreement.

6. Notwithstanding the provisions in Stipulations V.E.1 and E.2, the FS shall submit for case-by-case SHPO review, prior to approval of the undertaking, inventory reports for any undertaking where:

a. the FS chooses to consult case-by-case,

b. a substantial public concern exists about effects of the project on historic properties such that the expedited review procedures in this Agreement cannot ensure that those concerns will be adequately considered,

c. a disagreement exists with an Indian tribe concerning effects on a property of traditional cultural or religious significance to the tribe,

d. a SHPO or the Council requests that the FS consult case-by-case based on a substantial concern that historic properties may be adversely affected, or

e. a National Historic Landmark may be affected.

7. Reports for any inventory comprising more than 50 acres performed by an unsupervised paraprofessional will be reviewed and approved by the Forest Archaeologist and submitted to the SHPO for review prior to approval to implement the undertaking. Paraprofessionals will only perform surveys over 100 acres if directly supervised by a professional cultural resource specialist.

8. The FS will suspend any undertaking that does not conform to the conditions of this agreement and will consult as needed with the SHPO, the Council, and others if applicable, to bring the undertaking into conformance.

VI. Post-review Discoveries

The FS shall follow the procedures in 36 CFR 800.13 for post-review discoveries if historic properties are discovered or if unanticipated effects on historic properties are found after the FS has completed Section 106 consultation for the undertaking.

VII. Council Participation

A. The FS and SHPOs may seek advice, guidance and assistance from the Council concerning the application of this Agreement to specific undertakings, including the resolution of disagreements, whether or not the Council is formally involved in the review of the undertaking.

B. The FS shall notify and afford the Council an opportunity to participate in consultation to resolve adverse effects pursuant to the procedures in the Council's regulations (36 CFR 800.6(a)(1)), and when it proposes to develop a Programmatic Agreement for one or more undertakings.

C. In deciding whether to enter the consultation process, the Council will be guided by the criteria found in 36 CFR 800, Appendix A. For adverse effect findings that the Council declines to participate in, the FS and the SHPO may execute a Memorandum of Agreement (MOA) without Council participation and file the executed MOA with the Council prior to proceeding with the undertaking to document completion of the consultation process.

D. When the FS and the SHPO cannot reach agreement on the resolution of adverse effects for an undertaking, the FS shall request that the Council enter the Section 106 process.

E. When the SHPO and FS do not agree on a proposed "no historic properties affected" or "no adverse effect" finding, the FS shall request that the Council review the proposed finding and notify the FS and SHPO of its opinion regarding the finding. Additionally, participants in the

Section 106 process may seek advice, guidance and assistance from the Council pursuant to 36 CFR 800.2(b)(2) on the application of this Agreement to specific undertakings, including the resolution of disagreements, whether or not the Council is formally involved in the review of the undertaking. The FS shall take into account any views provided by the Council, to the extent it can, in reaching a final decision on the undertaking.

VIII. SHPO Participation

A. The State Historic Preservation Officer (SHPO) reflects the interests of the State and its citizens in the preservation of their cultural heritage. In accordance with Section 101(b)(3) of the NHPA, the State Historic Preservation Officer (SHPO) shall advise and assist the FS, local governments and organizations and individuals in carrying out its Section 106 responsibilities and shall cooperate with the FS to ensure that historic properties are taken into consideration at all levels of planning and development.

B. Except as provided elsewhere in this Agreement, SHPO will provide comments within 30 calendar days of receipt of a request to consult on FS undertakings. If the SHPO fails to respond within 30 calendar days of receipt of a request for review of a finding or determination under the terms of this Agreement, the FS may assume concurrence with the finding or determination and proceed accordingly. If the SHPO reenters the Section 106 process, the FS will not be required to reconsider previous findings and determinations.

IX. Data Sharing

A. The FS will maintain spatial and tabular site and survey data in its corporate database and GIS systems and will provide information in a compatible format to the SHPO, State agency or institution that maintains the statewide database. The FS will also ensure that inventory reports prepared in accordance with Stipulation V.E.1 and E.2 are transmitted to the State archaeological records repository if applicable. The FS and SHPO or state agency may enter into a data-sharing agreement to ensure timely and efficient data exchange and update. It is anticipated and understood that electronic databases and electronic data-sharing capabilities may take several years to fully develop.

B. The FS and the SHPOs will ensure that site locations and other confidential information are protected and made available only to qualified persons in accordance with state and federal guidelines, including Section 304 of NHPA and Section 9 of ARPA.

X. Personnel

A. To participate in this Agreement**,** each Region 3 National Forest shall employ a Forest Archaeologist with delegated Forest-wide responsibility in the Forest Supervisor's Office or in a field office. The Forest Archaeologist shall meet the professional standards established for archaeologist, as outlined in 36 CFR 296.8 or in the Secretary of the Interior's Standards and Guidelines for Professional Qualifications (48 FR 44738-44739) and the OPM X-118 Standards for fully professional level/journeyman level (GS-0193

series). The Forest Archaeologist shall be responsible for the quality of work and the professional judgments required in the implementation of this Agreement and for overall coordination of the Forest heritage program. If recommended by the Forest Archaeologist and requested by the Forest Supervisor, the Regional Forester may delegate certain report review responsibilities to other FS archaeologists who meet the above qualifications. The responsible Line Officer will consider the professional judgments and recommendations of the Forest Archaeologist or other delegated professional in his/her decision-making.

B. Archaeological inventories will be conducted by:

1. A professional cultural resource specialist who meets the standards established for archaeologist in the OPM X-118 professional (GS-0193) or technician (GS-0102) series.

2. A qualified paraprofessional cultural resource specialist trained, certified, and working in accordance with the standards specified in the FS Region 3 Manual Supplement (FSM 2361) and Handbook (FSH 2309.24). Such individuals must have completed the specialized training defined in FSM 2361.42, and must work under the guidance of professional cultural resources specialist, who will evaluate cultural properties, supervise all activities that might adversely affect historic properties (e.g., surface collecting, testing, data recovery, and stabilization), assess effects, and sign formal documents related to Section 106 compliance.

3. A professional consultant who meets the professional standards of 36 CFR 296.8, or the Secretary of the Interior's Standards and Guidelines for Professional Qualifications (48 FR 44738-44739).

XI. Training

A. The FS, with the SHPOs' assistance, shall design and administer training to facilitate implementation of this Agreement. The training will include detailed explanation of the procedures in the Agreement and the roles of the consulting parties. Training will be for FS line and staff and will be initiated within 12 months from the effective date of the Agreement. Indian tribes will be invited to participate in the training to facilitate future coordination and consultation.

B. New Region 3 employees who will consult with SHPO (Forest Archaeologists and any other archaeologist with delegated report review responsibilities) will undergo a minimum six-month period of orientation to this Agreement. This will include a mechanism for internal FS guidance and oversight during this period.

C. The FS may from time to time invite the SHPO to cooperate and participate in training opportunities for forest and district personnel on historic preservation topics.

XII. Dispute Resolution

Should any signatory to this Agreement object within the time frames allowed under the Agreement to any finding, proposed action or determination made pursuant to this Agreement, the FS will consult with the objecting party to resolve the objection. If the FS or the objecting party determines that the objection cannot be resolved, the FS will forward all relevant documentation to the Council in accordance with 36 CFR Section 800.2(b)(2).

A. Upon receipt of adequate documentation, the Council shall review and advise the FS on the resolution of the objection within 30 days. Any comment provided by the Council, and all comments from the parties to the Agreement, will be taken into account by the FS in reaching a final decision regarding the dispute.

B. If the Council does not provide comments regarding the dispute within 30 days after receipt of adequate documentation, the FS may render a decision regarding the dispute. In reaching its decision, the FS will take into account all comments regarding the dispute from the parties to the Agreement.

C. The FS's responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged. The FS will notify all parties of its decision in writing before implementing that portion of the Undertaking subject to dispute under this stipulation. The FS's decision will be final.

XIII. Monitoring

A. The Council, SHPO or the FS, or one or more of the parties in cooperation, may monitor activities carried out pursuant to this Agreement and will cooperate in recommending improvements in implementation.

B. The FS shall use its administrative review system to monitor the performance of individual forests under this Agreement and the overall effectiveness of the Agreement. Review findings shall be summarized in the Annual Report.

C. Annual Report. By March 1st of each year, the FS shall prepare an annual monitoring report for the SHPOs and the Council that covers the previous Fiscal Year. The report shall summarize the results of consultation under this Agreement, including:

1. A tabular listing, by Forest, of the number of undertakings within each of the categories in Stipulation V.E.

2. A list of individual undertakings determined to have an adverse effect on historic properties, including a summary of the resolution of adverse effects and reference to associated MOAs.

3. A listing by Forest of inventory reports handled under the provisions of Stipulations V.E.1 and V.E.2, if inventory documentation is to be provided in the annual report rather than through submission of individual reports.

4. A general summary of tribal consultation and cooperation, including a list of tribal MOUs executed during the Fiscal Year.

5. A summary by Forest of acres surveyed, sites inventoried, and sites evaluated under the terms of the Agreement.

6. A list of properties nominated to the National Register.

7. An assessment of the overall effectiveness of the Agreement including the resolution of any issues that arose regarding implementation of the Agreement and recommendations for improvement.

8. A discussion of any savings or efficiencies resulting from implementation of the Agreement and a description of NHPA Section 110 efforts and accomplishments.

D. Annual Review

The FS, SHPOs, and the Council if it chooses to attend, shall meet on an annual basis prior to May 1st of each year to review the effectiveness of the Agreement, its terms, the need for any amendments, and the need for revision or addition to the Appendices.

XIV. Amendments

Any signatory to this Agreement may request that it be amended, whereupon the parties will consult to consider the amendment.

XV. Suspension for Cause

The Regional Forester shall monitor compliance with the terms of this Agreement by individual Forests and may upon his or her own initiative or upon written notification from the SHPO or the Council, suspend a Region 3 National Forest from participation in this Agreement. Suspension from the Agreement requires the affected National Forest to comply with 36 CFR 800.3 through 36 CFR 800.6 with regard to all undertakings. Suspension of a National Forest may be lifted by the Regional Forester after that National Forest has demonstrably corrected the problem or deficiency that led to the suspension. The Regional Forester shall notify, and consult with, as needed the SHPO and the Council prior to either suspending a National Forest or lifting a suspension.

XVI. Termination

Any signatory to this Agreement may terminate it by providing sixty (60) days written notice to the other parties, provided that the parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. Termination of this Agreement, or failure to abide by its terms shall require the Forest Service to comply with 36 CFR 800 with respect to undertakings that otherwise would be reviewed under this Agreement.

XVII. Execution

Execution and implementation of this Agreement satisfies the FS's Section 106 responsibilities for all individual undertakings in Region 3 that are treated in conformance with the stipulations herein.

XVIII. Implementation

This Agreement becomes effective on the date of the last signature below and will be implemented immediately.

Lucia M. Turner November 10, 2003

Harv Forsgren Date

Regional Forester, USDA Forest Service, Region 3

James W. Garrison November 17, 2003

James W. Garrison Date

Arizona State Historic Preservation Officer

Katherine Slick November 13, 2003

Katherine A. Slick Date

New Mexico State Historic Preservation Officer

Bob Blackburn November 26, 2003

Bob L. Blackburn Date

Oklahoma State Historic Preservation Officer

F. Lawrence Oaks December 5, 2003

F. Lawrence Oaks Date

Texas State Historic Preservation Officer

John M. Fowler December 24, 2003

John M. Fowler, Executive Director Date

Advisory Council on Historic Preservation

APPENDIX A

CONSULTATION REQUIREMENTS

I. Undertakings Subject to Standard Consultation

The FS and the SHPOs agree that the following activities have the potential to affect historic properties and will normally require consultation. This list is not exhaustive and there may be other undertakings not listed here that require case-by-case review and consultation. This list may be revised or updated as needed by written agreement of the FS and SHPOs. If Consultation Protocols are developed for any of these activities, in accordance with Section IV.A.4, the protocols may be followed in lieu of standard consultation.

A. Timber sales and associated activities

B. Land exchanges, transfers, leases, or sales.

C. Permits, easements and right-of-way grants that authorize surface disturbance or have the potential to affect historic structures or traditional cultural properties.

D. Prescribed burns and prescribed natural fire, and burn area emergency rehabilitation.

E. Demolition or construction of facilities including recreation sites, buildings, etc.

F. Chaining and other ground disturbing range management activities

G. OHV designations of intensive use areas

H. Mine operating plans

I. Oil and gas applications to drill

J. Geothermal applications to drill

K. Coal and similar solid mineral lease applications

L. Site and historic building stabilization, rehabilitation, and restoration

M. Archaeological data recovery, excavation

N. Water distribution facilities

O. Range and wildlife improvement projects

P. Trail construction

Q. Seismic operations other than those listed in II.

R. Wilding sales other than those listed in II.

S. Fuelwood permits other than those listed in II.

T. Alteration of or additions to structures more than 40 years old

U. Mechanized site preparation and fuels reduction treatments

V. Restoration and repair of damaged archaeological resources (ARPA)

W. Allotment Management Plans

II. Exemptions

The following FS activities are exempt from further review and consultation. The FS and SHPOs agree that these classes of undertakings have predictable effects and a very low likelihood of affecting historic properties.

A. Permits, easements, rights-of-way, and leases that do not authorize surface disturbance or have the potential to affect historic structures or traditional cultural properties.

B. Activities where previous natural or human disturbance has modified the landscape so extensively that the likelihood of finding historic properties is negligible (for example, vertical expansion of existing pits).

C. Easement acquisitions

D. Land acquisitions

E. Maintenance of existing structural improvements (e.g., cattleguards, gates, fences, sign, stock tanks) that do not involve additional ground disturbance.

F. Tenant-type maintenance of historic buildings, i.e. routine maintenance and repair of historic buildings entailing no structural change, or any change of color, form, function or materials.

G. Seismic activities on surfaced or regularly maintained roads (e.g., within existing road prism) that do not affect known sites

H. Pesticide spray projects that will not affect known properties of traditional cultural and religious value.

I. Special legislation that specifically excludes compliance with NHPA

J. Withdrawal revocations

K. Activities limited within stream channels, not including terraces, cutbanks, etc.

L. Activities that involve less than 1 square meter of cumulative ground disturbance, unless within known sites

M. Installation of sign posts and monuments unless within known sites

N. Routine foot trail maintenance that does not involve new ground disturbance or known sites

O. Personal use, hand wilding permits that cover large areas, for example, District-wide

P. Personal use fuelwood permits that cover large areas, for example, District-wide or land management planning area wide

Q. Activities not involving ground or surface disturbance (e.g., timber stand improvement and precommercial thinning by hand)

R. Alteration of structures less than 40 years old

S. Mining and mill site patent applications

III. Screened Exemptions

The Forest Archaeologist shall review the following actions to determine whether they have the potential to affect historic properties. Screened exemptions for fence construction and road maintenance will expire on October 1, 2004 in New Mexico.

A. Fence Construction. Hand construction of fences where there is little likelihood of affecting historic properties. In reviewing fence construction projects, Forest Archaeologists will consider:

1. the nature and location of the fence

2. the construction method (no blading or use of mechanized equipment)

3. the presence or absence of known sites

4. the potential for disturbance due to cattle congregation or trailing

5. site density, cultural landscape considerations, or other local factors that might raise historic property concerns about a specific project.

B. Road maintenance. Routine road maintenance in the existing road prism where work is within previously maintained surfaces, ditches, culverts, and cut and fill slopes and where there are no known historic properties or historic properties would not be affected because proposed work is clearly within disturbed contexts. In reviewing road

maintenance projects, Forest Archaeologists will consider:

1. the nature and location of the road
2. the specific maintenance activities proposed
3. the presence or absence of known sites within or immediately adjacent to the road right-of-way
4. site density or other local factors that might raise historic property concerns about a specific project

C. Hand planting may or may not require consultation, based on location.

D. Heliportable seismic operations may or may not require consultation, based on location.

APPENDIX B

LIST OF PROPERTIES THAT MAY BE CONSIDERED ELIGIBLE

FOR PURPOSES OF THIS AGREEMENT

For eligibility determinations under this Agreement, the following types of heritage resources, provided they are 50 years old or older and clearly retain integrity, may be considered eligible for the National Register of Historic Places under criterion (d) without further SHPO consultation or concurrence:

- Properties with clear evidence for the presence of structures (historic structures, pueblos, pithouses, teepee rings, etc.)
- Properties with hundreds of surface artifacts
- Properties with clearly visible evidence of buried cultural deposits
- Properties with rock art
- Properties that clearly meet the National Register listing requirements in State historic contexts, existing multiple-property contexts, or SHPO-approved Forest-level historic contexts

Other properties will be treated as if eligible, unless the FS chooses to make a determination of eligibility in consultation with the SHPO. The SHPO will monitor eligibility determinations and discuss any problems at the annual meeting.

APPENDIX C

DEFINITIONS

All of the definitions included in 36 CFR 800 apply to this Agreement, some of which are included here for easy reference.

A. "Undertaking" means 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 the agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license, or approval.

B. "Emergency Undertaking" is a Region 3 undertaking proposed by the Regional Forester, Forest Supervisor, or District Ranger as an essential and immediate response to a disaster or emergency declared by the President, a tribal government, or the Governor of a State or another immediate threat to life or property (36 CFR 800.12).

C. "Exemptions" includes 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).

D. "Screened Exemptions." Some types of undertakings, by their nature, usually have little potential to affect historic properties, but may have such potential under certain circumstances and contexts. This agreement includes a process of internal FS review to identify whether specific undertakings may be exempt from further review and consultation (Appendix A, Section III).

E. "Standard Consultation Protocols" are 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.

F. "Standard Treatments" are standard treatment or mitigation measures for specific types of historic properties, which may be developed in consultation with the SHPOs;

G. "Area of Potential Effects" (APE) means 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.

H. "100 % or Complete Inventory" is 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.

K. "Sample Survey" is 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;

L. "Historic Property" means any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. 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 or Native Hawaiian organization and that meet the National Register criteria.

APPENDIX D

ATTACHMENT 3

AGREED-UPON STANDARD SITE PROTECTION MEASURES

Various combinations of the following protection measures may be approved by the Forest Archaeologists to protect sites within fuels reduction projects without additional SHPO consultation.

Prescribed Burning

Protect fire-sensitive sites:

Exclude from project area

Hand line

Black line

Wet line

Foam retardant

Structural fire shelter

Remove heavy fuels from site by hand

Prevent in-situ heavy fuels that cannot be removed from ignition (e.g., flush-cut & bury stumps)

Implement same protective measures for future maintenance burns

Protect selected other sites (option)

Allow burning over sites without fire sensitive features or materials:

No slash piles within site boundaries

No ignition points within site boundaries

No staging of equipment within site boundaries

Allow construction of safety zones and additional lines in 100% surveyed areas, with archaeological monitoring to assure recorded sites are avoided

Thinning

No thinning within site boundaries -or-

Allow thinning within site boundaries, provided:

- Cutting is accomplished using hand tools only
- Large diameter trees are falled away from all features
- Thinned material is hand carried outside site boundary

No use of mechanized equipment within site boundaries

No staging of equipment within site boundaries

Fuelwood Sales

No fuelwood cutting or vehicles within site boundaries -or-

Allow fuelwood cutting within sites, but do not allow vehicles within site boundaries

Allow fuelwood cutting in areas of continuous, low-density scatters, with post-project monitoring

The Forest Archaeologists may approve additional measures to further protect sites; however, if a lesser level of protection is recommended, or if it is likely that adverse effects cannot be avoided, the Forests shall consult with the SHPO on a case-by-case basis as specified in Stipulation 13.

APPENDIX E

STANDARD CONSULTATION PROTOCOL

FOR ROUTINE ROAD MAINTENANCE, ROAD CLOSURE AND ROAD DECOMMISSIONING PROJECTS

ON NATIONAL FORESTS IN NEW MEXICO

Developed pursuant to Stipulation IV.A.4 of the Region 3

First Amended Programmatic Agreement

Regarding Historic Property Protection and Responsibilities

The Forest Service (FS), in carrying out its mission, is committed to providing safe access to forest lands. Road maintenance is critical to ensuring safety for users and preventing erosion and damage to associated resources, including cultural resources. The FS and the New Mexico State Historic Preservation Officer (SHPO) have identified a need for a streamlined, consistent process for accomplishing road maintenance needs while identifying and protecting heritage resource sites within or adjacent to system roads, and to ensure open communication and cooperation in carrying out its mission.

There are currently 22,468 miles of system roads within the National Forests in New Mexico, of which 2750 miles are suitable for travel in passenger cars. Routine road maintenance is performed on approximately 2000 miles of these roads each year. More than 26,100 heritage sites have been recorded on the National Forests in New Mexico, some of which are located in or adjacent to forest roads. Many of these sites were initially impacted by the original construction or formation of roads and subsequent road maintenance. The FS and SHPO agree that some level of disturbance through continued routine road maintenance can be accepted in situations where the integrity of a site has already been substantially compromised.

Stipulation IV.A.4 of the Region 3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities (Programmatic Agreement) provides for the development of “Standard Consultation Protocols” for certain classes of undertakings where effects on historic properties and resulting protection and treatment are similar and repetitive. Such protocols specify standard procedures for the identification, evaluation, and treatment of historic properties. In accordance with the Programmatic Agreement, in

developing this protocol the FS consulted with the SHPO, the Advisory Council on Historic Preservation (Council), and Indian tribes for whom properties within proposed treatment areas might have traditional cultural or religious significance.

Once approved by the FS, the Council, and the SHPO, the Forests may implement the procedures in this protocol, in lieu of standard consultation practices outlined in the Programmatic Agreement or the Council's regulations, to take into account the potential effects of routine road maintenance on historic properties.

This protocol may not be used when conditions requiring case-by-case consultation specified in the Programmatic Agreement (Stipulation V.E.6) apply.

PROCEDURES

Forests shall ensure that the following stipulations are carried out:

1. SCOPE. This agreement will cover routine road maintenance of all FS system roads on the New Mexico National Forests as described below. Routine road maintenance activities include blading the road surface, cleaning and maintaining ditches, grade dips, waterbars and culverts and other drainage structures, and tree and brush removal to improve sight distance and vehicle recovery zones, and eliminating hazard trees (see definition of "routine maintenance" in Section VII). This agreement also covers road closure and decommissioning activities implemented under Forest-wide roads analyses NEPA decisions (see Section VI). This agreement does not cover heavy maintenance, reconstruction, new construction, realignment, pit development, material production, material stockpiling, or any other activities not defined as routine maintenance, road closure or decommissioning.

All system roads are identified by maintenance levels. Maintenance levels define the level of service provided by, and maintenance required for, a specific road. Level 3, 4 and 5 roads are passable by passenger cars and must meet the requirements of the Highway Safety Act. The road maintenance levels, as defined in the Forest Service Manual, are described below:

Level 1. Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed 1 year. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to

maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level.

Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic, but may be open and suitable for nonmotorized uses.

Level 2. Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level.

Level 3. Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.

Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material.

Level 4. Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated.

Level 5. Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated.

2. SCREENED EXEMPTION FOR ROUTINE MAINTENANCE. Forests may continue to conduct routine maintenance using Appendix A, Section III b (Screened Exemptions) until May 1, 2005. After May 1, Forests that do not choose to participate in this protocol will consult on routine maintenance following the procedures in stipulation V of the Programmatic Agreement.

3. ROADS EXEMPT FROM CONSULTATION. By March 1, 2005 each Forest will compile and submit to SHPO a list of roads, or segments of roads, to be included in Section I of this protocol. SHPO will review each list and comment within 30 calendar days. When a Forest and SHPO have agreed on Section I, this protocol will go into effect and no further consultation on these roads is required for routine road maintenance.

4. ROADS REQUIRING CONSULTATION. For all other activities on these roads, and for all other system roads, consultation shall be required and, as appropriate, the following stipulations in this protocol apply. Procedures for consultation on road closure

and decommissioning activities are contained in Section VI.

5. INTERNAL COORDINATION AND TRACKING. The Forests shall ensure that heritage specialists are brought into the planning process for road maintenance projects as early as possible. The Forest Archaeologist shall track implementation of heritage resource protection and monitoring requirements. Necessary communication and coordination between heritage specialists, road crews, and road managers will continue throughout the implementation of routine maintenance carried out under this protocol.

6. IDENTIFICATION AND EVALUATION. Each Forest Archaeologist shall determine or approve the level of field survey for projects using the guidelines in Section II. All surveys and evaluation of heritage resources will comply with the procedures detailed in stipulation V of the Programmatic Agreement. Indian tribes will be consulted in accordance with Stipulation III of the Programmatic Agreement.

7. PROTECTION. The Forest Archaeologist shall draw from the standard practices in Section III to avoid or minimize effects to historic properties. Site protection requirements shall be documented in the inventory report and on the Forest Inventory Standards and Accounting (IS&A) form.

8. EFFECT. Following completion of the survey and the associated evaluations, the Forests shall determine the effects of the routine maintenance activity on historic properties. The Forests shall consult with SHPO on formal excavations, modification or removal of historic road features, or for other activities not herein described to determine effect as specified in the Programmatic Agreement (Stipulation V.E. 4, 5, and 6). The Forest Archaeologist shall make the determinations of effect using the following:

(a) No Properties Present. When a road has been 100% surveyed on slopes less than 40% (2½:1 ratio), and no historic properties are identified within the area of potential effect, the road will be added to Section I without further consultation with SHPO. The Forest shall document that the road has been added to Section I in the “no historic properties” report, and forward a copy of the report, including Forest Service IS&A form, to the SHPO within 30 days.

(b) No Historic Properties Affected. When roads have been 100% surveyed on slopes less than 40% (2½:1 ratio), and historic properties are present but through application of the standard practices in Section III potential effects have been avoided from all eligible and unevaluated properties, a determination of “no historic properties affected” will be made for the routine maintenance activity. The undertaking may proceed following approval of the inventory report by the Forest Archaeologist and approval of the undertaking by the Forest Supervisor. The Forests shall forward a copy of each “no historic properties affected” report, including the Forest Service IS&A form and associated site forms to the SHPO within 30 days, as specified in the Programmatic

Agreement (Stipulation V.E.2). Subsequent routine maintenance along the same road does not require additional consultation provided that the scope of the activity remains consistent with routine road maintenance, and all agreed upon protection measures continue to be implemented.

(c) No Adverse Effect. When historic properties are present on roads that have been 100% surveyed on slopes less than 40% (2½:1 ratio) and adverse effects on eligible and unevaluated properties have been minimized through application of the standard practices in Section III a finding of "no adverse effect" will be made. The Forests shall forward a copy of each "no adverse effect" report, including the Forest Service IS&A form and associated site forms to the SHPO and other consulting parties for consultation, as specified in the Programmatic Agreement (Stipulation V.E.4).

(d) Adverse Effect. If the Forest Archaeologist determines that one or more historic properties may be adversely affected, and data recovery is the selected option, the Forests shall consult with the SHPO and other consulting parties on a Data Recovery Plan to mitigate adverse effects using the procedures in Section IV. If the FS and SHPO agree in writing on a Data Recovery Plan, a separate Memorandum of Agreement will not be required for the maintenance activity, and the FS may proceed to implement the agreed upon Plan. The FS will include a list of data recovery plans implemented under this protocol, in the annual report. If the FS and SHPO cannot agree on a Data Recovery Plan, the FS shall request that the Council join the consultation in accordance with 36 CFR 800.6(b)(1)(v). If the Forests propose to mitigate adverse effects other than through data recovery, the Forests shall follow consultation procedures provided in stipulation V.E.5 in the Programmatic Agreement.

9. MITIGATION. Historic properties requiring mitigation to resolve adverse effects of continued road maintenance activities are listed and prioritized in Section V of this protocol. The Budget Advice will encourage funding mitigation of historic properties using road funds. The historic properties listed in Section V have intact cultural deposits, are eligible for the National Register, and their eligibility is threatened by proposed road maintenance activities or their presence is preventing road maintenance. Once effects to sites in a specific road have been mitigated following an approved data recovery plan as described in Stipulation 8d and Section IV of this protocol, and there are no further potential effects to the sites from routine maintenance activities, this road or road segment may be added to Section I without further consultation with SHPO.

10. MONITORING. Where road maintenance activities are proposed within the site boundary, the Forest Archaeologist may require the presence of a FS professional cultural resource specialist to monitor road maintenance activities performed within the boundaries of a site. All monitoring requirements shall be specified in the inventory report and shall be implemented. Following maintenance activity, the Forest

Archaeologist or a qualified FS professional cultural resource specialist will inspect a sample of sites to determine whether the protection methods were effective. The results of the inspection and effectiveness of the protection methods will be documented on the Forest Service IS&A form and sent to SHPO within 30 days of completion of the report and IS&A.

11. DISCOVERY SITUATIONS. Previously unrecorded cultural materials or human remains that are discovered during the course of road maintenance shall be protected and all activity that could result in disturbance to the property shall halt, and the Forest Archaeologist shall be notified immediately. If the Forest Archaeologist determines that a property is eligible and will be impacted, the Forest shall notify the SHPO of the discovery and the proposed action.

12. EMERGENCY ROAD REPAIR PROVISIONS.

(a) Declared Emergencies: The FS shall follow the procedures in 36 CFR 800.12 until a standard protocol has been developed pursuant to stipulation IV.A.4. of the PA.

(b) Local Emergencies: In isolated instances, a line officer might determine that a local emergency exists requiring roadwork or repairs to preserve lives or property. The line officer must document this decision, and the time and date it is made, in writing in advance of earth-disturbing activity. The Forest Archaeologist or other FS professional cultural resource specialist with delegated responsibilities shall be notified prior to undertaking any ground disturbing activities.

- If the FS has surveyed the road in question to current standards, and if no historic properties were located in the area of potential effect of the emergency roadwork, and the roadwork is confined to the area surveyed, work may proceed with no further consultation. If historic properties were located in the area, and the Forest has conducted data recovery at the properties, work may proceed with no further consultation. The FS professional cultural resource specialist shall document the actions on an IS&A form and 1:24,000 scale USGS map, and maintain the records in the Forests heritage files.

- If the Forest has not surveyed the road to current standards, then the Forest Archaeologist, or other FS professional cultural resource specialist with delegated responsibilities, must be notified at the same time as the road crew. The date and time of the notification must be documented. If a FS professional cultural resource specialist or qualified para-archaeologist is at the scene of the emergency before work begins, then work may begin. Their goal is to assist the road crew to avoid all heritage resources. If

the FS professional cultural resource specialist or para-archaeologist is not at the scene of the emergency before work begins, then emergency repairs must be limited to those sections of roads that have been damaged, or are needed for emergency access. When a FS professional cultural resource specialist or para-archaeologist arrives, they shall inspect the scene of the emergency. If no heritage resources are observed, or, if present, no heritage resources have been or will be affected by the emergency roadwork, the FS professional cultural resource specialist or para-archaeologist shall document the results of their inspection of the roadwork and send the report to SHPO within 90 days. All heritage resources observed shall be fully recorded and documented.

- If a heritage resource at which data recovery has not been conducted is known within the area of potential effect of the roadwork, then the Forest Archaeologist, or other FS professional cultural resource specialist with delegated responsibilities must be notified at the same time as the road crew. The date and time of the notification should be documented. If a FS professional cultural resource specialist or qualified para-archaeologist is not at the scene of the emergency before work begins, then emergency repairs must be limited to those sections of roads that have been damaged, or are needed for emergency access. When a FS professional cultural resource specialist or para-archaeologist arrives, they shall inspect the scene of the emergency. Their goal is assist the road crew to avoid the heritage resource and its features to the maximum extent possible. If the heritage resources have not been affected by the emergency roadwork, and no new heritage resources are observed, the FS professional cultural resource specialist or para-archaeologist shall document the results of their inspection of the roadwork and send the report to SHPO within 90 days. An update form shall be completed for previously recorded heritage resources and a full recording made for all newly discovered heritage resources.

- During any emergency roadwork or repairs, if any heritage resources have been affected by the road work, and, in the opinion of a FS professional cultural resources specialist, that damage can be treated without creating additional disturbance, then the FS professional cultural resource specialist shall propose a treatment plan within seven days and implement it within thirty days. The Forests shall document any treatments applied as a result of the emergency roadwork and submit a treatment report to the SHPO within one year. If data recovery or other disturbing treatments are necessary, the work plans must be submitted to SHPO for review prior to treatment implementation.

This stipulation applies only to emergency roadwork and repairs that will be implemented within 14 days after the line officer has determined an emergency exists. Any repairs made more than 14 days after that date are not considered an emergency and should be implemented in accordance with the other stipulations of this protocol or the

Programmatic Agreement. No other kinds of work other than roadwork are covered by this stipulation of the roads protocol.

13. LOOTING. The FS shall make a diligent effort to reduce looting, artifact collecting, and vandalism to sites located along forest roads. Particular attention will be paid to the method of site marking, visibility of the site, evidence of artifact collecting or other looting activities, and previous instances of looting or vandalism in the area. Forests are encouraged to develop a program to monitor for vandalism and to utilize New Mexico SiteWatch volunteers.

14. APPROVAL. In cases of "no historic properties affected" and "no effect", when all of the above stipulations are complied with and the inventory report has been approved by the Forest Archaeologist, the Forest Supervisor may approve the report and proceed with the undertaking, provided all appropriate site-specific protection measures are implemented. For cases of "no adverse effect", the FS shall submit the proposed undertaking to the SHPO for review as provided for in Programmatic Agreement Section E(4). For cases of "adverse effect", the Forest Supervisor may proceed with the undertaking once the requirements in Stipulation 8 (d) and section IV of this protocol have been met when the adverse effects are mitigated through data recovery. If the adverse effects are resolved through measures other than data recovery, the Forest Supervisor may proceed with the undertaking once the requirements in stipulation V.E.5 of the Programmatic Agreement are met.

15. COORDINATION WITH OTHER ENTITIES. The FS will hold initial coordination meetings with County, State, Tribes, or other entities who maintain FS system roads, to discuss this protocol. Additional coordination should occur annually. The Forests will ensure that the Forest Archaeologist reviews the road agreements and/or annual work plan with these entities prior to approval to ensure that Section 106 consultation has been completed, and clauses have been included requiring the avoidance or protection of historic properties. The initial and annual coordination will include a discussion on historic property location, demarcation, protection requirements, and discovery situations.

16. ANNUAL REVIEW. As part of the Annual Meeting carried out pursuant to the Programmatic Agreement (Section XIII.D), the Forests, the SHPO, and the Council, if it chooses to participate, shall discuss the activities carried out pursuant to this protocol, reevaluate its procedures, and determine whether continuation, modification, or cancellation is appropriate. The results of the site monitoring activities and effectiveness of the site protection measures will be discussed at the annual meeting.

17. AMENDMENTS. The FS, Council, or the SHPO may propose an amendment to this protocol whereupon the parties will consult to consider such change. Changes may be

made by written consent of the Regional Forester, Council, and SHPO.

18. TERMINATION. The FS, Council or the SHPO may cancel this protocol by providing sixty (60) days notice. The parties will consult during the period prior to cancellation to seek agreement on modification or other actions that would avoid cancellation. In the event the protocol is canceled, the Forests shall comply with the Programmatic Agreement or 36 CFR 800 with regard to individual undertakings that otherwise would be covered by this protocol.

19. IMPLEMENTATION. This protocol becomes effective on the date of the last signature below.

SIGNATURES:

/s/ Abel M. Camarena 10/01/04

Regional Forester Date

USDA Forest Service – Southwestern Region

/s/ Katherine Slick 10/06/04

State Historic Preservation Officer Date

State of New Mexico

/s/ John M. Fowler_____
¬¬¬¬¬¬¬¬¬¬¬¬¬¬¬¬¬¬10/25/04

Executive Director Date

Advisory Council on Historic Preservation

APPENDIX E

SECTION I

ROADS EXEMPT FROM FURTHER CONSULTATION

FOR ROUTINE MAINTENANCE

Section I includes a list of roads, or road segments, where a determination has been made that there is little likelihood that intact cultural deposits will be impacted by road maintenance activities. This list will be updated annually.

Original construction or formation of roads and subsequent maintenance has impacted heritage resources. In many cases, these activities have disturbed the cultural deposits, and continued routine maintenance will have negligible additional impact.

Level 3, 4, and 5 Roads (Initial Section I List)

The Forest Archaeologist will conduct an analysis of the Level 3, 4, and 5 roads and will consider the location of the roads, amount of survey in and around roads, location of known sites, impacts to known sites, and the likelihood of intact cultural deposits. It is anticipated that most level 3, 4, and 5 roads that are regularly maintained will be included in this list, and that, in most cases, 100% survey of these roads will not be a requirement for listing. Level 3,4, and 5 roads that have deteriorated to level 2, should be treated as level 3,4, and 5 roads when being considered for inclusion into the initial list for Section I. When the Forest Archaeologist determines that routine maintenance of the road or road segment is unlikely to impact intact cultural deposits, the Forest Archaeologist will add the road or road segment to the initial Section I list. The list along with a summary of the Forest Archaeologist's analysis will be forwarded to the SHPO for consultation and concurrence. In these situations the FS and SHPO agree that routine maintenance may continue without further consultation.

Level 1 and 2 Roads

The Forest Archaeologist will add Level 1 and 2 roads and road segments to Section I

when the road or road segment is 100% surveyed (as described in Section II), no eligible historic properties are present or likely to be affected by routine maintenance activities, and the inventory report has been submitted to SHPO, or after adverse effects on eligible properties have been mitigated as described in Section 8d and Section IV of this protocol. In making this determination, the Forest Archaeologist must consider whether the road could be part of an eligible historic road or trail or if eligible New Deal (CCC) era or other historic culverts, retaining walls or other historic features are associated with the road could be affected by routine road maintenance activities. The SHPO will offer technical assistance to the Forest Archaeologist in evaluating the potential that a road may be historic.

APPENDIX E

SECTION II

HERITAGE RESOURCE SURVEY STRATEGIES FOR ROADS NOT INCLUDED IN SECTION I

The Forest Archaeologist shall consider the following to determine appropriate survey strategies under this protocol:

1. PRE-FIELD RESEARCH. The Forests will utilize relevant information to assess the road maintenance activity's potential to affect heritage properties and the expected nature and distribution of heritage properties that may be affected. This will include:

(a) The expected nature and severity of all associated maintenance impacts based on:

- road maintenance levels
- types of maintenance activities
- equipment used
- slope and topography
- current condition of the road

(b) The expected nature and distribution of heritage resources based on:

- heritage GIS survey and site layers or hard copy survey, NMCRIS, and site atlases

- previous heritage reports and site forms
- cultural resource overviews and planning assessments
- information obtained through tribal consultation and public input
- information provided by other resource specialists familiar with the project area
- historic maps
- topographic maps, aerial photographs, ortho-photo quads
- other available GIS layers and maps including soils, vegetation type, slope

2. FIELD SURVEY. The following will guide the identification of areas selected for survey and the level of survey coverage for each treatment method on roads not included in Section I: No field survey is required for routine maintenance on roads listed in Section I. Portions of roads on 40% or greater slopes within the road maintenance area of potential effect are exempt from required field survey.

(a) When the FS proposes to perform a 100% inventory of an undertaking's area of potential effect, no consultation with the SHPO regarding the level of inventory or extent of survey will be required.

(b) When the FS proposes to perform a less than 100% inventory of the area of potential effect, the SHPO will be given an opportunity to comment on the proposed level, extent, and design of inventory. The SHPO will respond within 15 calendar days of receipt of the FS's sample inventory design.

(c) Areas previously surveyed to current standards, as defined in paragraph V.C.2 of the Programmatic Agreement, do not have to be resurveyed.

(d) A 100% survey is required for any ground disturbing activity, including but not limited to:

- construction of new turnouts, ditches, or other earthen drainage structures.
- laying back banks or cutting into slopes.
- installation of new culverts and cattleguards
- ground disturbing activities with potential to affect significant historic roads, CCC culverts, or other associated historic features
- pit development or expansion of existing pits
- excavation of material to be used as fill or surfacing

- heavy maintenance
- road construction, reconstruction, realignment, or relocation
- other ground disturbance outside the existing road prism in excess of a total of one square meter in size

(e) Survey width must be sufficient to cover all associated road maintenance needs, including cleaning or constructing drainage structures, installing culverts and cattleguards, etc. Survey width of 15 meters on either side of the centerline is the minimum width appropriate for most roads. Increase the survey width as needed in areas where drainage structures or other road features approach or extend beyond 15 meters in order to provide an additional work area for maintenance activities and to minimize the likelihood that follow-up surveys will be needed for new drainage structures or heavy maintenance activities in the future. Limited testing within the road prism during survey to gather sufficient information to determine the presence or absence of intact cultural deposits is encouraged. Limited tests include auguring, trowel testing, and shovel testing and do not require pre-consultation with the SHPO.

3. SURVEY GUIDANCE

(a) Level 1 Roads

Routine maintenance on Level 1 roads is generally minimal. The Forest Archaeologist will review the proposed maintenance activities using the guidelines in this Section to determine the level of survey needed.

(b) Level 2 Roads

All maintenance activities conducted on Level 2 roads will be surveyed 100% for heritage resources unless located on slopes greater than 40% (2½:1 ratio).

(c) Level 3, 4, and 5 Roads

For Level 3, 4, and 5 roads not included in Section I, the Forest Archaeologist shall review the roads and proposed maintenance activities using this section, to determine the level of survey needed.

(d) County/Contractor/Other Non-FS Maintained Roads

Routine maintenance activities performed by entities other than the FS on roads listed in Section I do not require further consultation. The Forest Archaeologist will review all other roads to determine the survey requirements using the criteria in this Section. All other requirements of this protocol apply. It is the responsibility of the FS to ensure that the State, county, or other entity adheres to the site protection requirements of the

clearance.

APPENDIX E

SECTION III

STANDARD PRACTICES

1. SITE PROTECTION MEASURES

The following standard practices, applied singly or in combination, may be approved by the Forest Archaeologist without consultation with the SHPO. The Forest Archaeologist may approve additional non-ground disturbing measures to further protect sites; however, if a lesser level of protection is recommended, or if it is likely that adverse effects cannot be avoided, the Forest shall consult with the SHPO on a case-by-case basis as specified in the Programmatic Agreement.

- Limited testing, defined as limited auguring, trowel testing and shovel testing within the road prism to determine if the road has cut below the cultural level. Limited testing will be conducted to verify the absence or presence of cultural deposits and will be designed to meet these objectives without substantially damaging or diminishing the integrity of the cultural deposits and features. Limited tests may not serve as mitigation. If intact cultural deposits, features, etc. are encountered, testing will stop in the area of the discovery.

- Removing small samples of charcoal or other materials from disturbed hearths within the road prism prior to maintenance activities, when limited testing has demonstrated that no intact deposits are present in the roadbed. Once samples have been removed, the samples will be submitted for analysis in a timely manner.

- Restricting vehicular traffic to the existing road prism within a site boundary to protect intact site deposits that lie outside the road prism.

- Temporary fencing to keep equipment out of site boundaries.

- Closing or gating roads to protect sites.

- Excluding the site from the project area by prohibiting maintenance within the site boundary (lifting the blade). This protection measure is discouraged and shall be used in limited cases where road safety is not compromised. Avoiding sites using this method makes road maintenance difficult and can result in further damage to the site. This option should be used only where future erosion on the site is not a factor if the road is not maintained, for instance where the road is on level ground in well-drained soil. If this option is selected the following activities must occur:

o Place on Priority Sites for Mitigation List (Section V)

o mark the site and notify road personnel.

o monitor to assure sites are avoided

2. PLATING

Plating or intentional burial of sites as mitigation of effects is often an irreversible action. Detailed documentation and a limited amount of data recovery likely will be needed before sites are covered up. The plating system must be designed to prevent compaction, moisture retention, or other potential impacts to sites and artifacts. The effectiveness of the plating should be assessed and sites may need to be periodically monitored to ensure the plating is working. The plating is a form of mitigation and the SHPO will be consulted on all plating proposals in determining the level of effect.

3. FORMAL TESTING & DATA RECOVERY

The following activities are subject to consultation:

(a) Formal Testing

Formal testing is defined as any excavation beyond the limited auguring, trowel testing or shovel testing described in part 1 of this Section. Formal testing generally involves controlled excavation in levels within a formal grid or other excavation unit, maintaining horizontal and vertical provenience on all artifacts. All formal testing is subject to consultation with SHPO.

(b) Mitigation

All mitigation, whether through data recovery or other types of treatment, is subject to consultation. Where sites of a similar nature are adversely affected, a programmatic approach may be developed. For example, developing a data recovery plan for a population of sites in which a sample of sites is excavated instead of all sites is often appropriate and should be considered. For historic roads and features, archival research is an appropriate part of the mitigation. Section IV contains standard data recovery procedures.

4. MAINTENANCE ACTIVITIES APPROPRIATE FOR NO HISTORIC PROPERTIES AFFECTED

It is agreed that the following maintenance activities will result in a "No Historic Properties Affected" determination:

- routine maintenance where no sites are present, or when the road is demonstrated to be below the cultural level,
- installing new wing ditches, culverts, or cattleguards when the road has been surveyed 100% to a width adequate to cover the length of the ground disturbance, and where no sites are present,
- driving equipment across sites on the existing road bed.

5. MAINTENANCE ACTIVITIES APPROPRIATE FOR NO ADVERSE EFFECT

It is agreed that the following maintenance activities will result in a "No Adverse Effect" determination:

- cleaning accumulated rocks, dirt and silt from existing modern ditches, lead out ditches, and culverts within site boundaries as long as no new ground disturbance takes place,
- cleaning accumulated rocks, dirt and silt from historic CCC culverts or other historic culverts and ditches when historic stonework will not be affected and no new ground disturbance takes place,
- maintaining existing grade dips and waterbars within site boundaries as long as there are no features or intact cultural deposits within the road, and there is no new ground disturbance,
- blading the road surface within the site boundary if no known features, structures, or intact cultural deposits are being impacted.

APPENDIX E

SECTION IV

STANDARD DATA RECOVERY PROCEDURES

A. Where site protection or avoidance of adverse effects through application of the standard practices in Section III is not feasible, FS, in consultation with SHPO, shall evaluate the historic properties and ensure that a Data Recovery Plan is developed for the mitigation of the anticipated effects of road maintenance activities on eligible properties.

B. The Data Recovery Plan shall be consistent with the Secretary of Interior's Standards and Guidelines (48 FR 44716-44742) and the Council's Recommended Approach for Consultation on Recovery of Significant Information from Archaeological Sites (64 FR 95:27085-27087)

C. The Data Recovery Plan shall minimally specify the following:

1. Description of the affected historic properties and the nature of anticipated effects

2. Applicable research questions and goals that will be addressed through data recovery, along with an explanation of their relevance and importance

3. Detailed description of field and analysis methodologies, including but not limited to formal testing, excavation, laboratory analysis including samples of all analyses and processing forms, archival research, and documentation of historic features.

4. The repository where artifacts and associated records will be curated.

5. For historic properties that may have traditional cultural or religious significance to Indian tribes, a list of the tribes that have been consulted and the results of that consultation. The FS shall coordinate tribal consultation under this Protocol with its consultation responsibilities under the Native American Graves Protection and Repatriation Act (NAGPRA) regarding treatment of any human remains and funerary objects that might be encountered.

6. Identification of any other consulting parties, such as County governments, or oil and gas companies, that will have a role in carrying out the proposed data recovery, and evidence of their commitment to fulfill their responsibilities.

D. Review of draft Data Recovery Plans

1. The FS shall submit a draft Data Recovery Plan to the SHPO and other consulting parties, including any tribes that attach traditional cultural or religious significance to the property. This will include curriculum vitae for the principal investigator and field director. All parties will have 30 calendar days from receipt to review and provide comments to the FS. Lack of comment within the review period may be taken as concurrence with the plan.

2. If substantive revisions to the Plan are needed, all consulting parties will have 20 calendar days from receipt to review and comment on the revisions. If no comments are received within this period, the FS may assume that the reviewer concurs with the revisions.

3. Once the Data Recovery Plan is approved in writing by the FS and SHPO, the FS shall provide copies of the Plan to the consulting parties and may proceed to implement the Plan. In these cases, a Memorandum of Agreement, pursuant to 36 CFR 800.6(c) will not be required.

4. If the FS and the SHPO cannot agree on a Data Recovery Plan, the FS shall request that the Council join the consultation, in accordance with 36 CFR 800.6(b)(1)(v).

E. Report

1. The FS shall ensure that when the field work phase of data recovery has been completed, the results of the analysis shall be compiled in a final report, with a copy provided to the SHPO and to any other consulting parties.

2. The FS shall ensure that all records resulting from the data recovery shall meet the documentation and archival standards in the Historic Preservation Divison's New Mexico Cultural Resource Information System User's Guide, edition current at the time the field work is initiated. Historical documentation, including drawings and photographs, shall meet the standards agreed to with the SHPO in the Data Recovery Plan.

3. After the completion of the final report, all cultural materials and associated records collected from sites will be curated at a qualified New Mexico repository.

APPENDIX E

SECTION V

PRIORITY SITES FOR MITIGATION

Historic properties listed in this Section have intact cultural values, and their eligibility is threatened by road maintenance or their presence is preventing road maintenance. They have been prioritized for mitigation to be funded by the forests. The FS agrees to mitigate effects on selected high priority sites based on funding levels. This Section will be updated annually to include new priority sites.

SECTION VI

PROCEDURES FOR ROAD CLOSURE AND DECOMMISSIONING

Forests are in the process of conducting NEPA analyses of their road systems to determine which roads are needed for management purposes and should remain open system roads and which roads are not needed and either should be temporarily closed or permanently decommissioned. Roads proposed for closure or decommissioning will receive a combination of treatments to meet site-specific closure and decommissioning objectives.

Closed roads are those that the Forest Service has identified as not currently needed for National Forest System land and resource management for at least one year but where there is an anticipated need for the road in the future. A variety of methods will be used to close roads, including gates, guardrails, tree trunks/branches, boulder arrays, earthen berms, or simply signs that specify the closure. Roads proposed for closure would be stabilized where needed by reconstructing drainage ditches and surfaces, maintaining or removing culverts, water-barring culvert locations, and/or rock-armoring low-water crossings to minimize their potential for sediment delivery to streams.

Decommissioned roads are those that have been identified as no longer needed to meet forest resource management objectives." Road decommissioning activities include, reestablishing former drainage patterns, stabilizing slopes, restoring vegetation, blocking the entrance to the road, installing water bars, removing culverts, reestablishing drainage-ways, removing unstable fills, pulling back road shoulders, scattering slash on the roadbed, completely eliminating the roadbed by restoring natural contours and slopes, or other methods designed to meet the specific conditions associated with the unneeded road. However, in some cases decommissioning activities may be as minimal as abandonment provided the road does not pose a risk to public safety, lands and resources, or require maintenance. Abandonment is an option where there is no need to address access, drainage, erosion, stability, and revegetation on a road or road segment.

Procedures

1. Phased Approach. Because implementation of a Forest or District NEPA decision

regarding road closure and decommissioning is likely to involve many miles of road and take place over the course of several years as funding becomes available, the consulting parties agree that the Forest may use a phased approach to the identification and evaluation of historic properties that may be affected by the subsequent closure and decommissioning activities.

a. NEPA Decision. A final NEPA decision on road closure and decommissioning may be made prior to completion of the identification and evaluation of all properties potentially affected by subsequent closure and decommissioning activities provided that all of the following requirements are met:

1) the expected nature and distribution of historic properties along roads on the affected unit will be discussed and considered in the NEPA analysis and associated Section 106 report, including the expectation that the protection measures in item 2 below will be sufficient to protect properties from adverse effects.

2) a condition of the FS satisfying its responsibilities under Section 106, clearly stated in the initial Section 106 report and on the IS&A Form, is that the identification and protection requirements of the Region 3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities, including the written approval of the Forest Archaeologist and Forest Supervisor, shall be completed prior to the award of any contract, permit, or other authorization for on-the-ground work associated with road decommissioning and closure.

3) the NEPA decision document will clearly state that initiation of work for road decommissioning and closure projects will be contingent upon completion of the identification and protection of historic properties and compliance with applicable provisions of NHPA in accordance with the Region 3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities.

b. Individual Projects. The Forests shall consult on individual road closure and decommissioning projects on a case-by-case basis, following the procedures in the Region 3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities (Programmatic Agreement).

2. Standard Protection Measures. The Forest Archaeologist shall draw from the protection measures listed below to ensure that effects to historic properties are avoided or minimized. Site protection requirements shall be documented in the inventory report and on the Forest Service Inventory, Standards and Accounting (IS&A) Form. Options include:

a. No earth-disturbing decommissioning and closure activities within the boundaries of eligible or unevaluated sites

b. No use or staging of heavy mechanized equipment within site boundaries

c. Allow road decommissioning activities within the boundaries of eligible or unevaluated sites if the Forest and the SHPO agree that the activities will have no effect or no adverse effect on the identified historic properties.

3. Mitigation. If the Forest Archaeologist determines that one or more historic properties may be adversely affected by a road decommissioning or closure project, and data recovery is the selected option, the Forests shall consult with the SHPO and other consulting parties on a Data Recovery Plan to mitigate adverse effects using the procedures in Section IV of this Protocol. If the FS and SHPO agree in writing on a Data Recovery Plan, a separate Memorandum of Agreement will not be required for the maintenance activity, and the FS may proceed to implement the agreed upon Plan. If the FS and SHPO cannot agree on a Data Recovery Plan, the FS shall request that the Council join the consultation in accordance with 36 CFR 800.6(b)(1)(v). The FS will include a list of data recovery plans implemented under this protocol, in the annual report prepared pursuant to the Region 3 Programmatic Agreement.

SECTION VII

DEFINITIONS

100% Surveyed: Complete archaeological survey of all areas less than 40% slope.

Bridge Maintenance Items (Modern Bridges): Include but are not limited to, scour repair, deck repair, railing repair, cleaning decks, repairing the superstructure, and removing debris and trash from the waterway opening.

Brush Removal: This work includes but is not limited to providing for sight distance and clear zone, improved drainage, road preservation, and safety. Work also includes removal of brush that interferes with intended use of the facility.

Clearing Width: Refer to Figure 1

Council: Advisory Council on Historic Preservation

Cultural Deposits: Surface and subsurface soils within a site that contain cultural materials.

Cultural Materials: Any material remains of past human life or activities that are more than 50 years old, including artifacts, structures, or features.

Decommissioning: Demolition, dismantling, removal, obliteration and/or disposal of a deteriorated or otherwise unneeded asset or component, including necessary cleanup work. This action eliminates the deferred maintenance needs for the fixed asset. Portions of an asset or component may remain if they do not cause problems nor require maintenance

Deferred Maintenance: Deferred maintenance can include maintenance that is included in the definition of routine maintenance and therefore covered by this protocol.

Drainage Structures: Including but not limited to culverts, ditches, drainage dips and water bars, catch basins, low water crossings, trash racks, drop inlets, and energy dissipaters.

Emergency: An unforeseen combination of circumstances that results in a need for immediate action.

Fencing: Includes but is not limited to enclosures, separators, and railings.

Forest Archaeologist: The Forest Archaeologist or a FS professional cultural resource specialist with delegated responsibilities as described in Stipulation X.A of the Programmatic Agreement.

Heavy maintenance: Maintenance beyond Routine Road Maintenance, such as constructing new wing ditches or other drainage structures, road widening, laying back banks, or other new ground disturbance outside the existing road prism.

Historic Properties: Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places, maintained by the Secretary of Interior. 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 that meet the National Register criteria.

IS&A: Inventory Standards and Accounting Form, R3-FS-2300-4, attached to each report, provides information of a summary nature for each heritage resource project accomplished on National Forest System lands within the Region, as well as determinations of effect, site eligibility, and avoidance/mitigation recommendations. The Forest Supervisor's signature on the form documents the FS approval of the undertaking. The IS&A form also documents SHPO concurrence.

Known Site: A heritage resource site that has been previously recorded or is known to the Professional Cultural Resource Specialist, but has not yet been recorded.

Low Water Crossings: Types of installations may include placement of oversized rock, geoweb, concrete, gabions, and other typical installations for low water crossings.

Maintenance: The act of keeping fixed assets in an acceptable condition. Maintenance includes work needed to meet laws, regulations, codes, and other legal direction as long as the original intent or purpose of the asset is not changed.

Maintenance Levels 1 - 5: A description of a variety of operational maintenance standards as identified in the Forest Service Handbook (Buildings – FSH 7309.11 – Chap. 40, Roads - FSH 7709.58 - Chap. 10).

Material Production and Stockpiling: Includes but is not limited to ripping, blasting, or pushing, to produce mineral materials to be utilized for embankment and surfacing as necessary for the intended use.

Modern: Less than 50 years old, or galvanized corrugated metal pipe.

Pit Development: Includes but is not limited to clearing, grubbing, topsoil removal and stockpiling, and preparing the area for aggregate material production.

Pit Rehabilitation: Includes but is not limited to reshaping slopes, controlling access, revegetation, and providing drainage where material has been removed.

Prism: See Road Prism

Road Prism: The cross-sectional profile of a roadway from top of cut to toe of fill. See "Roadway" in Figure 1.

Roadbed Reconditioning: Consists of surface grading for smoothness, drainage, ditch maintenance, and drainage dips. Restore to design template.

Routine Road Maintenance: Activities on existing roads within the road prism, including: aggregate placement, dust abatement, blading the road surface, roadbed reconditioning, cleaning and maintaining ditches, grade dips, waterbars and other drainage structures. Tree and brush removal within the road prism to improve sight distance and maintain vehicle recovery zones is included. Tree and brush removal outside the road prism but within the right-of-way and felling of hazard trees are routine maintenance if done with hand tools and chainsaws with removal techniques that do not cause ground disturbance (no skidding). Replacement of modern in-kind (same size and length) culverts and cattleguards is included in routine maintenance. Installation or replacement of signs and posts, provided that disturbance is less than 1 square meter, and the sign is not within the boundary of a known site is included in routine maintenance.

Constructing new wing ditches or turnouts, road widening, laying back banks, or other new ground disturbance outside the existing road prism are not routine maintenance.

Segments of Roads: Road segments shall be defined by distinct natural features or road intersections.

Scheduled Maintenance: Predictable and planned maintenance performed at regular intervals.

Sight Distance: The distance at which the vehicle driver can see an approaching vehicle, sign, or objects in the roadway.

Site: Historic properties, historic features, cultural resources, heritage resources, archaeological sites, traditional cultural properties.

Vehicle Recovery Zones: Also known as clear zones, a vehicle recovery zone is an unobstructed, relatively flat, area provided beyond the edge of the traveled way for the recovery of errant vehicles.

Figure 1—Illustration of road structure terms.

APPENDIX F

STANDARD CONSULTATION PROTOCOL

FOR

NOXIOUS WEED CONTROL

Noxious weeds (non-native and noxious plant species, commonly referred to as “weeds”) pose a threat to existing plant populations and ecosystem health in many areas of the Southwest, including National Forests. Forests in Region 3 are in the process of preparing Forest-wide plans for noxious weed control . Treatments include manual methods with hand tools or hand-operated power tools, mechanical methods such as mowing and disking with heavy machinery, biological methods using live insect or plant pathogens, controlled grazing using goats and sheep, chemical methods using herbicides, plant cultural methods using native species to control weeds, and prescribed burning using fire to reduce weed populations. Several of these methods have the potential to affect historic properties eligible for nomination to the National Register.

The Forest Service has determined that it is not feasible to complete the identification, evaluation, and effects consultation for future noxious weed control projects that may be conducted under the Forest-wide noxious weed plans prior to signing the NEPA decisions for those plans. Because individual projects will be planned and implemented on an annual basis over the course of several years, a phased approach is needed for the identification and evaluation of historic properties.

Stipulation IV.A.4 of the Region 3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities (Programmatic Agreement) provides for the development of "Standard Consultation Protocols" for certain classes of undertakings where effects on historic properties and resulting protection and treatment are similar and repetitive. Such protocols specify standard procedures for the identification, evaluation, and treatment of historic properties. In accordance with the Programmatic Agreement, in developing this protocol the Forest Service consulted with the Arizona, New Mexico, Oklahoma, and Texas State Historic Preservation Officers (SHPOs), the Advisory Council on Historic Preservation (Council), and 50 Indian tribes for whom properties within National Forests might have traditional cultural or religious significance.

Once approved by the Forest Service, the Council, and the SHPOs and once formally incorporated into the Programmatic Agreement as Appendix F, the Forests may implement the procedures in this protocol, in lieu of standard consultation in the Programmatic Agreement or the Council's regulations, to take into account the potential effects of the noxious weed control projects on historic properties.

PROCEDURES

The Forests shall ensure that the following procedures are carried out:

1. SCOPE. This protocol covers all projects authorized by Forest-wide noxious weed control plans. Activities covered by the protocol include: removal and eradication of noxious weed populations that pose a threat along roads, trails, recreation sites, administrative sites, range improvements and other plant locations. Treatments may include hand pulling, grubbing with hand tools or hand operated power tools, mowing and disking with tractor-mounted mower or plow, biological control using insects or plant pathogens introduced into weed habitat, controlled grazing using goats and sheep to intensively and repeatedly graze weeds, chemical or herbicidal application to weed populations using hand or vehicle mounted sprayer applications, cultural plant methods using native or appropriate plant species to supplant weed species, and prescribed burning using limited pile or broadcast burning to eliminate seed heads and resident populations of weeds.

2. PHASED IMPLEMENTATION OF NOXIOUS WEED CONTROL PROJECTS. The consulting parties agree that Forests may use a phased approach to the identification and evaluation of historic properties that may be affected by future projects planned and carried out under Forest-wide plans for noxious weed control.

a. Forest-wide Plans. A final NEPA decision on a Forest-wide plan for noxious weed control may be made prior to completion of project-specific identification, evaluation, and effect determinations provided that all of the following requirements are met:

1) the expected nature and distribution of properties that may be present in weed control project areas and anticipated effects are discussed and considered in the initial Section 106 report and in the NEPA analysis;

2) there is no reason to believe that the protection measures in Item 6 below will not be sufficient to protect potentially affected historic properties;

3) a condition of the Forest satisfying responsibilities under Section 106, clearly stated in the initial Section 106 report and on the IS&A Form, is that the identification and protection requirements of this protocol, including the written approval of the Forest Archaeologist and Forest Supervisor, shall be completed prior to the award of any contract, issuance of any permit, or other action authorizing on-the-ground activities associated with a noxious weed control project. Written approval will be based on the project inventory report and will be documented on the Inventory, Standards and Accounting (IS&A) Form.

4) the NEPA decision document clearly states that initiation of noxious weed control projects will be contingent upon completion of the identification and protection of historic properties, and compliance with applicable provisions of NHPA in accordance with this protocol.

b. Individual Projects. The identification and evaluation of historic properties and the assessment of effects for individual noxious weed control projects shall be completed on a case-by-case basis prior to Forest authorizations to proceed with those projects.

1) Each Forest shall develop an annual schedule of noxious weed control projects to be submitted to the Forest Archaeologist to evaluate identification and evaluation needs. The annual schedule of noxious weed control projects requiring consultation, including

proposed herbicide projects, will be included in the annual list of projects submitted to the tribes or will be consulted on in accordance with Forest tribal consultation Memoranda of Understanding. The annual schedule of noxious weed control projects will be provided to the SHPOs and the public upon request and may be made available to the public on Forest websites. If new areas and treatments are identified and planned during the year, the Forest Archaeologist will be contacted to evaluate identification and evaluation needs, including tribal consultation for proposed herbicide projects.

2) Each Forest shall ensure that heritage specialists are brought into the planning for noxious weed control activities as early as possible in the planning process, that a system is in place to track Section 106 compliance and the implementation of heritage resource protection and monitoring requirements, and that necessary communication and coordination between project specialists and heritage specialists will continue throughout the implementation of noxious weed control activities carried out under this protocol.

3. PUBLIC INVOLVEMENT. Each Forest shall use the NEPA scoping process and the procedures in Section II of the Programmatic Agreement to seek and consider the views of the public regarding Forest-wide noxious weed control plans. In addition, an annual list of proposed noxious weed control projects will be made available to the public upon request and information on proposed herbicide treatments will be posted at treatment sites. Any concerns expressed about a project's possible effects on historic properties will be addressed in the inventory report and considered with respect to Stipulation 13.b of the Programmatic Agreement.

4. TRIBAL CONSULTATION. The Forest shall use the principles and procedures in Section III of the Programmatic Agreement to assure that tribes are consulted as early as possible in the planning process and that properties of traditional cultural and religious significance are identified and addressed. If traditional cultural properties are identified, the Forest shall consult with the affected tribes regarding inventory, evaluation, effect, and protection or treatment measures.

5. PROJECT-SPECIFIC CONSULTATION PROCEDURES. The Forest shall use the procedures in Section V of the Programmatic Agreement to complete the identification, evaluation, and determination of effects for specific noxious weed control projects, including State-specific requirements for submitting inventory reports to the SHPOs. It is agreed that, in accordance with the Programmatic Agreement, Appendix A.II, Exemptions, the following projects do not require further consultation:

- biological methods using live insect or plant pathogens that do not involve ground or surface disturbance
- cultural methods using native species to control weeds that do not involve ground or surface disturbance
- herbicide spray projects that will not affect properties of traditional cultural and religious value identified by tribes
- hand treatments that involve little or no ground or surface disturbance, e.g. flower and seed head removal from annual plants, hand pulling young plants without the use of tools

6. PROTECTION. For other projects, if sites are present, the Forest Archeologist shall draw from the following measures to ensure that effects to historic properties are avoided or minimized:

a. Protection measures and situations appropriate for No Historic Properties Affected:

1) prohibit mechanical treatments within site boundaries

2) prohibit use or staging of heavy mechanized equipment within site boundaries

3) prohibit pile burning within site boundaries

4) allow broadcast burning of weeds on sites, provided fire-sensitive sites are protected

5) allow low-impact or low-intensity hand tool treatments within site boundaries, e.g. using hand tools to pull a few scattered, herbaceous plants, torch burning individual plants, subject to approval by the Forest Archaeologist

b. Protection measures and situations appropriate for No Adverse Effect:

1) allow other hand tool treatments within site boundaries, e.g. grubbing out larger, established woody plants with a Pulaski or hoe, provided the treatment is designed to minimize surface disturbance, based on the nature of the site and the nature of the

treatment, subject to approval by the Forest Archaeologist

2) allow goat or sheep grazing on sites with periodic monitoring to assure that surface disturbance, if present, is minimal

3) other treatments within the boundaries of eligible or unevaluated sites if the Forest and the SHPO agree that the activities will have no adverse effect on historic properties.

Site protection requirements shall be documented in the inventory report and on the IS&A form. Sites identified for protection will be monitored in accordance with Forest Service policy.

7. DISCOVERY SITUATIONS. There is some potential for encountering previously unrecorded properties or for affecting properties in an unanticipated manner during the course of noxious weed control activity implementation. Previously unrecorded properties that are encountered during the course of a noxious weed control activity shall be protected in the same manner as other eligible or unevaluated properties, using the protection measures in Item 6 above. If a Forest determines that an eligible or unevaluated property has been damaged, the Forest shall halt all activities that could result in further damage to the property and shall notify SHPO and any affected tribes concerning proposed actions to resolve adverse effects. The SHPO shall respond within 48 hours of notification. The Forest shall carry out the agreed-upon actions.

8. ANNUAL REVIEW. As part of the Annual Meeting carried out pursuant to the Programmatic Agreement (Stipulation XIII.D), the Forests, the SHPOs, and the Council, if it chooses to participate, shall discuss the activities carried out pursuant to this protocol, reevaluate its procedures, and determine whether continuation, modification, or cancellation is appropriate. Since individual projects will be submitted to SHPOs for review in accordance with the normal procedures in the Programmatic Agreement, a separate annual report summarizing these activities will not be prepared.

9. MODIFICATION. The Forest Service, Council, or the SHPOs may request modifications to this protocol whereupon the parties will consult to consider such change. Changes may be made by written consent of the Regional Forester, SHPOs, and Council after appropriate consultation.

10. CANCELLATION. The Forest Service, Council or the SHPOs may cancel this protocol by providing thirty (30) days notice. The parties will consult during the period prior to cancellation to seek agreement on modification or other actions that would avoid cancellation. In the event the protocol is canceled, the Forests shall comply with the Programmatic Agreement or 36 CFR 800 with regard to individual undertakings that otherwise would be covered by this protocol.

11. IMPLEMENTATION. This protocol becomes effective on the date of the last signature below and may be implemented immediately.

SIGNATURES:

Lucia M. Turner, for_____ 01/05/05___

Harv Forsgren Date

Regional Forester, USDA Forest Service – SW Region

James Garrison_____ 01/24/05___

James W. Garrison Date

Arizona State Historic Preservation Officer

Katherine Slick_____ 01/12/05___

Katherine A. Slick Date

New Mexico State Historic Preservation Officer

Bob Blackburn_____ 2/1/05_____

Bob L. Blackburn Date

Oklahoma State Historic Preservation Officer

F. Lawrence Oaks_____ 2/10/05____

F. Lawerence Oaks Date

Texas State Historic Preservation Officer

John M. Fowler_____ 4/4/05_____

John M. Fowler, Executive Director Date

Advisory Council on Historic Preservation

APPENDIX G

STANDARD CONSULTATION PROTOCOL

FOR HAND-CONSTRUCTED FENCES

ON NATIONAL FORESTS IN NEW MEXICO

Developed pursuant to Stipulation IV.A. of the Region 3

First Amended Programmatic Agreement

Regarding Historic Property Protection and Responsibilities

National Forests in New Mexico manage many miles and different kinds of fences. The term "fence" usually applies to many forms, many of which are constructed of upright posts with boards, rails, pickets or wire, or also to iron structures with open work of horizontal or vertical bars. Existing fences, including the vast majority of fences covered by this agreement, require upkeep and maintenance. Some projects may require new fence construction. Fences serve many functions but on National Forests they are used to separate grazing pastures, control access to sensitive resource areas or to demarcate National Forest and other property boundaries. Much of the fencing on the Forests is associated with range allotment and property boundaries. Fence construction using hand-held tools generally has little or no potential to affect on historic properties; however, in some cases, new construction and reconstruction projects do have the potential to affect such properties.

Stipulation IV.A.4 of the Region 3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities (Programmatic Agreement) provides for the development of "Standard Consultation Protocols" for certain classes of undertakings

where effects on historic properties and resulting protection and treatment are similar and repetitive. Such protocols specify standard procedures for the identification, evaluation, and treatment of historic properties. In accordance with the Programmatic Agreement, in developing this protocol the Forest Service (FS) consulted with the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (Council), and Indian tribes for whom properties within proposed treatment areas might have traditional cultural or religious significance.

Once approved by the FS, the Council, and the SHPO, National Forests in New Mexico shall implement the procedures in this protocol, in lieu of the Screened Exemption for Fence Construction in Appendix A.III of the Programmatic Agreement, to take into account the potential effects of fence construction and reconstruction on historic properties .

1. SCOPE This protocol covers hand construction of new fences, and hand reconstruction of existing fences. This includes but is not limited to use of hand-operated steel post drivers, posthole diggers, and hand-held mechanical and power augers. The protocol does not include installation of cattleguards or use of heavy equipment in fence construction and reconstruction, such as use of dozers or bushhogs to clear proposed fence lines. Installation of cattleguards and other activities using heavy equipment, such as truck-mounted augers, backhoes or bulldozers, fall under the standard consultation requirements of the Programmatic Agreement.

New fence construction involves establishment of a new fence using steel and/or wooden posts, wire, mesh, chain link, buck and pole, worm fences (a form of fence consisting of stacked blocks and poles resting on the ground surface with no poles) and other materials. These fences may include enclosures, exclosures, drift fences, rock barriers (rocks or boulders placed on the ground and not excavated into place), jersey barriers (long trapezoidal concrete slabs commonly used in highway construction), barricades, cable and pole barriers, boundary fences, soil and other sample plots, range fences and resource protection fences. Generally, these fences are built by hand using a post hole digger, steel post driver or gas powered hand auger to place wood or steel posts. Wire or other material is strung or hung from the posts. Ground disturbing activities include placement of posts and H-braces, anchors, and other reinforcement points.

Fence reconstruction involves replacing fence posts or H-braces and/or replacement of wire or material. Fence reconstruction may involve relocation of sections of the fence to accommodate resource concerns. Activities associated with reconstruction are similar to new construction. Relocation or realignment of significant portions of a fence would be considered new fence construction.

2. PROCEDURES: Forests shall ensure that the following stipulations are carried out:

A. The Forest Archaeologist or an archaeologist with delegated responsibilities shall review all new hand-constructed fence construction and reconstruction proposals on the National Forest regardless of project proponent (i.e. permittees, inholders) to determine whether they have the potential to affect Historic Properties. In reviewing proposals the Forest Archaeologist or archaeologist with delegated responsibilities shall consider:

1. The nature and location of the fence, i.e. type of fence and topography and landform

2. The construction method and extent of disturbance (no blading or use of heavy equipment

3. The presence or absence of known sites and the level of existing inventory for the area, e.g. existing fences through known sites may be rerouted as to avoid the site, and fences through surveyed areas that do no cross known sites would require no additional consideration

4. The potential for disturbance due to cattle, wildlife or recreational forest users, congregation or trailing

5. Site density, cultural landscape considerations, or other local factors that might raise historic property concerns about a specific project

6. The potential for tribal and other traditional community concerns related to traditional cultural properties and/or traditional uses

7. The historical significance of the fence itself, e.g. as a contributing element of a historic district or property.

B. Fences Exempt From Consultation: When the Forest Archaeologist or archaeologist with delegated responsibilities determines that a fence construction or reconstruction proposal has little or no potential to affect historic properties no further consultation with the SHPO is required.

C. Fences Requiring Monitoring But No Consultation: If the Forest Archaeologist determines that a fence construction or reconstruction proposal has the potential to affect historic properties, but provides for monitoring or inspection of the sensitive areas by a professional cultural resource specialist during the construction or reconstruction, no further consultation with the SHPO is required, except to report discovery situations.

D. Fences Requiring Consultation: When the Forest Archaeologist or archaeologist with delegated responsibilities determines that a fence construction or reconstruction proposal has the potential to affect historic properties the standard consultation procedures of the Programmatic Agreement (Stipulation V) shall apply.

E. Annual Review: As part of the Annual Meeting carried out pursuant to the Programmatic Agreement (Section XIII.D), the Forests, the SHPO, and the Council, if it chooses to participate, shall discuss the activities carried out pursuant to this protocol, reevaluate its procedures, and determine whether continuation, modification, or cancellation is appropriate.

F. Discovery Situations: Previously unrecorded cultural materials or human remains that are discovered during the course of fence construction and reconstruction shall be protected and all activity that could result in disturbance to the property shall halt, and the Forest Archaeologist shall be notified immediately. If the Forest Archaeologist determines that a property is eligible and will be impacted, the Forest shall notify the SHPO of the discovery and the proposed action.

G. AMENDMENTS. The FS, Council, or the SHPO may propose an amendment to this protocol whereupon the parties will consult to consider such change. Changes may be made by written consent of the Regional Forester, Council, and SHPO.

H. TERMINATION. The FS, Council or the SHPO may cancel this protocol by providing sixty (60) days notice. The parties will consult during the period prior to cancellation to seek agreement on modification or other actions that would avoid cancellation. In the event the protocol is canceled, the Forests shall comply with the Programmatic Agreement or 36 CFR 800 with regard to individual undertakings that otherwise would be covered by this protocol.

I. IMPLEMENTATION. This protocol becomes effective on the date of the last signature below.

SIGNATURES:

/s/ Abel M. Camarena 6/23/2005

Harv Forsgren, Regional Forester Date

USDA Forest Service – Southwestern Region

/s/ Katherine Slick _____ 6/27/2005

Kak Slick, State Historic Preservation Officer Date

State of New Mexico

/s/ John M. Fowler _____ 7/09/2005

John M. Fowler, Executive Director Date

Advisory Council on Historic Preservation

APPENDIX H

STANDARD CONSULTATION PROTOCOL

FOR RANGELAND MANAGEMENT

Developed pursuant to Stipulation IV.A. of the Region 3

First Amended Programmatic Agreement

Regarding Historic Property Protection and Responsibilities

In administering multiple-use management of National Forest System lands, Region 3 manages rangeland resources in conformance with Forest Service regulations (36 CFR 222, Subpart A, Grazing and Livestock Use on the National Forest System) and policies (FSH 2209.13 – Grazing Permit Administration Handbook). Livestock, which share the rangelands with deer, elk, antelope and other wildlife, were introduced in the Southwest by the Spanish in the late 16th Century. By the late 1800s, cattle grazing on open ranges in Arizona and New Mexico grew to more than 1,500,000 head. Around the turn of the century, the number of cattle slowly declined as sheep increased to more than 1,000,000 head on the newly established Forest Reserves. Range conditions were deteriorating as a result of years of overgrazing. Establishment of the National Forests in 1905 provided the opportunity for the implementation of a program that would manage the grazing of livestock. Over the years, efforts to reduce the numbers of livestock and implement sound rangeland management practices have been successful in improving range conditions. Today, approximately 237,000 cattle and 79,000 sheep are permitted to graze on Forest Service Lands in Region 3, with half that number actually grazing during dry years. Most of the National Forest System land in Region 3 is included in grazing allotments. Currently, Region 3 National Forests manage 1,520 grazing allotments, covering more than 18 million acres, through the administration of 1,836 grazing permits. Various activities associated with rangeland management have the potential to affect historic (i.e. listed, eligible and undetermined) properties. In most cases, this effect will not be adverse.

Stipulation IV.A.4 of the Region 3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities (Programmatic Agreement) provides for the development of “Standard Consultation Protocols” for certain classes of undertakings where effects on historic properties and resulting protection and treatment are similar and repetitive. Such protocols specify standard procedures for the identification, evaluation, and treatment of historic properties. In accordance with the Programmatic Agreement, in developing this protocol the Forest Service consulted with the Arizona, New Mexico, Oklahoma, and Texas State Historic Preservation Officers (SHPOs), the Advisory Council on Historic Preservation (Council), and 50 Indian tribes for whom properties within National Forests might have traditional cultural or religious significance.

Once approved by the Forest Service, the Council, and the SHPOs and once formally incorporated into the Programmatic Agreement as Appendix H, the Forests may implement the procedures in this protocol, in lieu of standard consultation in the Programmatic Agreement or the Council's regulations, to take into account the potential effects of range management activities on historic properties.

The following discussion of the NEPA process and range management is intended to illustrate the manner in which range management is carried out and is not intended to indicate that the Section 106 responsibilities will be met using the NEPA process. The Section 106 process, as described in this protocol and the Region 3 Programmatic Agreement, will be carried out concurrently with the NEPA process.

Current Forest Service policy uses a strategy known as "adaptive management" to manage grazing allotments. Adaptive management is a formal, systematic, and rigorous approach to learning from the outcomes of range management actions, accommodating change, and improving management. Range management actions and monitoring programs are designed to generate reliable feedback. Actions and objectives are adjusted based on this feedback.

This strategy for range management includes several steps:

1. identification of desired conditions

2. identification of existing conditions

3. identification of resource management needs (to move from existing to desired conditions)

As part of this broad-scale assessment, possible management practices are identified, some or all of which are carried forward into a proposed action for a grazing allotment(s) NEPA analysis. The NEPA process: 1) identifies purpose, need, and management objectives; 2) identifies proposed management practices (i.e., a range of livestock use levels, seasons, durations, plus any associated vegetative or erosion control treatments – both immediate and possible future needs); 3) identifies proposed range improvements (e.g., fences, water developments - both immediate and possible future needs); 4) analyzes the environmental effects and effects to historic properties of the proposed action and one or more alternatives; 5) identifies mitigation measures to avoid or

minimize effects to historic properties and 6) identifies appropriate monitoring to be used to determine if management objectives are being met or if adjustments within the prescribed range of practices are needed. The NEPA scoping process and the procedures in Section II of the Programmatic Agreement will be used to meet the requirements of Section 106 for public involvement.

The NEPA analysis results in a grazing decision. If grazing is authorized, an Allotment Management Plan (AMP) is then developed (or modified) to formalize the direction in the decision with the permittee(s). The AMP becomes Part 3 of the 10-year term grazing permit that is then issued to the grazing permittee(s) within 90 days of final agency action (NEPA decision or final appeal decision).

Adaptive management allows for adjustments to range management actions and objectives based on changing conditions. The adjustments will stay within the range of management options that were analyzed during the NEPA process. Such adjustments may include, for example, reducing livestock numbers or duration of grazing during times of drought or if monitoring reveals that vegetation or other objectives are not being met, or, conversely, increasing livestock numbers or duration of grazing if forage conditions improve significantly and desired conditions are being met or exceeded. Adjustments may be made to protect historic properties. Adjustments also may include the development and construction of range improvements identified in the selected alternative. The strategy is based on continuous monitoring, feedback, and fine-tuning. Achieving and maintaining allotment desired conditions is expected to benefit historic properties by providing improved vegetation cover and more stable soils, thereby reducing the potential for direct or indirect impacts to historic properties.

This protocol defines the procedures by which historic properties (listed, eligible and undetermined sites) will be considered in planning and conducting rangeland management activities in Region 3. It is recognized that these historic properties have been subjected to grazing for hundreds of years, at levels much higher than current grazing practices, and that some degree of impacts may have already occurred. The procedures in this protocol were developed in consultation with the Arizona, New Mexico, Oklahoma, and Texas SHPOs in the 1990s and documented in informal signed agreements. This protocol formalizes and updates the existing process and brings it under the guidance of the current Programmatic Agreement.

PROCEDURES

Forests shall ensure that the following procedures are carried out:

I. SCOPE. The issuance of grazing permits by the Forest Service is recognized as an undertaking that has the potential to affect historic properties. This protocol addresses the potential effects to heritage resources from the authorization of livestock grazing in allotment NEPA decisions, including management practices and range improvements. Management practices include the range of livestock numbers, the range of timing, intensity, frequency and duration of grazing within an allotment, and any associated vegetation or other treatments that are authorized in the decision. Range improvements include facilities such as fences, corrals, stock tanks, water troughs, water pipelines, etc. The Area of Potential Effect (APE), generally considered to be the boundaries of the grazing allotment, will be determined following the procedures in Section V(B) of the Programmatic Agreement.

II. APPROACH

A. Inclusion of Heritage Resources in the Grazing Allotment NEPA Analysis.

1. A professional cultural resource specialist will be included in or will provide input to inter-disciplinary teams set up to assess an allotment's desired future conditions and management needs and to conduct the subsequent NEPA analysis.

2. The range staff and the heritage staff will discuss the existing and potential impacts to historic properties from both current grazing and the proposed grazing system and management practices, including any known impacts or areas of concern.

3. Existing and potential impacts of grazing on historic properties will be discussed in the Section 106 cultural resource report and subsequent NEPA analysis, along with any site-specific mitigation measures. Where appropriate, protection measures and heritage monitoring requirements will be included in the Section 106 report, and incorporated in the NEPA analysis and associated grazing decision.

4. The NEPA decision document will include a statement that future improvements

and other ground-disturbing management practices that are scheduled beyond the first two years and were not included in the Section 106 cultural resource report will be contingent upon the completion of the identification and protection of historic properties and compliance with all applicable provisions of Section 106 of NHPA.

B. Analysis of Impacts to Heritage Resources from Cattle Grazing

1. This section describes the procedures to be followed in analyzing the potential effects of cattle grazing on heritage resources. Using available heritage information (maps and GIS layers, heritage databases, past heritage AMP reports) and range information (use pattern maps, proposed management practices), areas of high grazing use, including a possible shift to a more intensive grazing system, and known sensitive sites or site concentrations will be reviewed. Sensitive sites may include, but are not limited to, ruins with free-standing walls, historic structures and TCPs. In locations where cattle are likely to be attracted to or congregate, rock shelters and rock art sites may also be sensitive sites.

2. The level of need and extent of new field surveys or inspections for grazing impacts will be determined by the Forest Archaeologist. This stipulation will take the place of pre-consultation with SHPO concerning the level, extent, and design of inventory for grazing impacts. If new surveys for grazing impacts are determined necessary, they will be conducted prior to the signing of the NEPA decision. Complete (100%) field survey of any given allotment or groupings of allotments will not be required. Rather, field surveys or inspections for grazing impacts will be conducted in areas where there are known or potential impacts to heritage resources or specific areas of concern in order to identify and assess site conditions. In making the decision on the level of survey to be conducted, the Forest Archaeologist will consider the following and document the decision in the heritage resource report:

a. grazing history

b. proposed changes in grazing management practices

c. known incidents of or high potential for damage to sites

d. presence of grazing-sensitive sites

e. presence of areas where cattle congregate

f. amount of the allotment previously surveyed for cultural resources

g. site density

h. information provided by employees, permittees or other users

C. Analysis of Impacts to Heritage Resources from Range Improvements and Ground Disturbing Management Practices.

1. Immediate Implementation. The standard Section 106 Process (as defined in Section V of the PA) will be implemented on all range improvements and ground disturbing management practices that are planned and have been identified on the ground at the time of the NEPA analysis, and are certain to be implemented within two years of signing the NEPA decision. This includes new range improvements, vegetation treatments, or other ground disturbing practices and activities.

2. Long-Term Implementation. The parties agree that Forests may use a phased approach for the standard Section 106 process regarding improvements and ground disturbing management practices scheduled beyond two years that are identified on the ground (specific location) and analyzed during the initial NEPA analysis, but not planned for implementation within the first two years. These improvements and management practices would be implemented through adaptive management as previously described. If it is determined that these improvements or practices are needed, and prior to implementation, the standard Section 106 process (as defined in Section V of the PA) would be completed.

3. Whether planned for immediate implementation (within the initial two-year period), or as part of a phased long-term approach, a 100% survey will be performed on all proposed ground-disturbing range improvements scheduled for development except for hand-constructed fences and exempt undertakings as defined in Appendix A Part II of the PA. Less than 100% survey may be appropriate for certain ground disturbing management practices, for example large area vegetation treatments in locations previously disturbed. The forests shall pre-consult with SHPO when proposing less than 100% survey on these projects on a case-by-case basis. Areas previously surveyed to current standards, as defined in paragraph V.C.2 of the Programmatic Agreement, do not have to be resurveyed.

4. New Mexico Forests will utilize Appendix G of the Programmatic Agreement, Standard Protocol for Hand-Constructed Fences on National Forests in New Mexico, in consulting on fences. Arizona Forests will treat fences as screened exemptions as defined

in the Programmatic Agreement.

D. Monitoring.

Monitoring not specified as part of the Section 106 consultation report or NEPA decision document will be conducted as part of the day-to-day activities of the professional cultural resource specialists. Grazing allotments cover most of any given forest, and when archaeologists are in the field conducting surveys for timber sales or fuelwood sales, for example, they are most likely surveying within a grazing allotment. The archaeologists will use these opportunities to observe and report on grazing activities, the effectiveness of the grazing strategy, and potential impacts to heritage resources. Any incidents of damage to historic properties from grazing will be reported, and the archaeologists will draw upon the protection measured outlined in Section VI below to ensure the effects are avoided or minimized. Results of these informal monitoring activities will be discussed in the annual meetings with the SHPOs as provided for in Section XIII(D) of the Programmatic Agreement.

III. PUBLIC INVOLVEMENT. Each Forest shall use the NEPA scoping process and the procedures in Section II of the Programmatic Agreement to seek and consider the views of the public regarding range management activities and their potential effects on historic properties.

IV. TRIBAL CONSULTATION. The Forest shall use the principles and procedures in Section III of the Programmatic Agreement to assure that tribes are consulted as early as possible in the planning process and that any tribal concerns about properties of traditional cultural and religious significance are addressed. If traditional cultural properties (TCPs) are identified, the Forest shall consult with the affected tribes regarding inventory, evaluation, effect, and protection or treatment measures. The SHPO will be a party to these consultations if the traditional cultural properties are also architectural or archaeological sites.

V. CONSULTATION PROCEDURES. Where not specified in this protocol, Forests shall use the consultation procedures contained in Section V of the Programmatic Agreement.

VI. PROTECTION MEASURES. Where impacts to specific historic properties are documented or likely to occur, mitigation measures will be developed and implemented. The Forests may draw from but not be limited to the following mitigation measures to ensure that effects to historic properties are avoided or minimized:

1. fencing or exclosure of livestock from individual sensitive historic properties or areas containing multiple sensitive historic properties being impacted by grazing.

2. relocation of existing range improvements and salting locations sufficient to ensure the protection of historic properties being impacted by concentrated grazing use.

3. relocation or redesign of proposed range improvements and ground-disturbing management practices to avoid direct and indirect impacts to historic properties.

4. periodic monitoring to assess site condition and to ensure that protection measures are effective

5. other mitigation measures involving data recovery, for example, will be developed and implemented in consultation with the SHPO. The appropriate tribes will be consulted if the mitigation is invasive or if it affects a TCP or other property of concern for them.

VII. REPORTS

A. Reports for grazing allotment NEPA analysis and Section 106 consultation will include:

1. a brief description of the allotment and its grazing history

2. nature of the decision to be made and brief summary of proposed action and alternatives, including proposed improvements and ground-disturbing management practices

3. percent of allotment inventoried to current standards and brief summary of the nature and distribution of historic properties, including traditional cultural properties, if any, and results of tribal consultation (the report need not repeat general overview information contained in prior AMP reports, which should be appropriately referenced)

4. nature and results of inventories and inspections conducted

5. determination of effect

6. recommendations (site-specific protection measures, monitoring, mitigation etc.)

7. a statement that future improvements and ground-disturbing management practices will be contingent upon completion of the identification and protection of historic properties and compliance with applicable provisions of NHPA. This will include acceptance of the inventory report by the Forest Archaeologist or other FS archaeologist with delegated responsibilities and appropriate SHPO and tribal consultation.

B. Reports for future improvements and ground-disturbing management practices will follow the guidelines in Stipulation V.C.4 of the Programmatic Agreement. These reports, along with any monitoring or inspection reports, will be submitted to SHPOs in accordance with Stipulation V.E of the Programmatic Agreement.

VIII. DISCOVERY SITUATIONS. Previously unrecorded properties that are encountered during the course of implementing a ground-disturbing range management activity shall be protected in the same manner as other eligible or unevaluated properties, using the protection measures in Item VI above. If a Forest determines that an eligible or unevaluated property has been damaged, the Forest shall halt all activities that could result in further damage to the property and shall notify SHPO and any affected tribes concerning proposed actions to resolve adverse effects. The SHPO shall respond within 48 hours of notification. The Forest shall carry out the agreed-upon treatment actions.

IX. ANNUAL REVIEW. As part of the Annual Meeting carried out pursuant to the Programmatic Agreement (Stipulation XIII.D), the Forests, the SHPOs, and the Council, if it chooses to participate, shall discuss the activities carried out pursuant to this protocol, reevaluate its procedures, and determine whether continuation, modification, or cancellation is appropriate. Since individual projects will be submitted to SHPOs for review in accordance with the normal procedures in the Programmatic Agreement, a separate annual report summarizing these activities will not be prepared. The results of the opportunistic monitoring outlined in Section D will be a topic of discussion in the annual meeting.

X. MODIFICATION. The Forest Service, Council, or the SHPOs may request modifications to this protocol whereupon the signatories to the programmatic agreement

will consult to consider such changes. Changes may be made by written consent of the Regional Forester, SHPOs, and Council after appropriate consultation.

XI. CANCELLATION. Signatories to this agreement may terminate this protocol by providing thirty (30) days written notice provided the party wishing the termination has first made a good faith effort to follow the dispute resolution process as outlined in Stipulation XII of the Programmatic Agreement. In the event the protocol is terminated, the Forests shall comply with the process outlined in the Programmatic Agreement or 36 CFR 800 with regard to individual undertakings that otherwise would be covered by this protocol.

XII. IMPLEMENTATION. This protocol becomes effective on the date of the last signature below and may be implemented immediately.

SIGNATURES:

_____ /s/ Lucia M. Turner _____ 3/28/2007 __ ____

Harv Forsgren Date

Regional Forester, USDA Forest Service – SW Region

_____ /s/ James W. Garrison _____ _____ ____5/3/2007_ __

James W. Garrison Date

Arizona State Historic Preservation Officer

_____ /s/ Katherine Slick _____ _____ ____4/10/2007 _

Katherine A. Slick Date

New Mexico State Historic Preservation Officer

___ _ /s/ Bob L. Blackburn ____ ___ _ _____ 4/28/2007__ ___

Bob L. Blackburn Date

Oklahoma State Historic Preservation Officer

___ _ /s/ F. Lawrence Oaks____ _____ ____5/4/2007_ _____

F. Lawrence Oaks Date

Texas State Historic Preservation Officer

___ _ /s/ John M. Fowler_____ ____ _____ ____5/17/2007___
___

John M. Fowler, Executive Director Date

Advisory Council on Historic Preservation

APPENDIX I

STANDARD CONSULTATION PROTOCOL

FOR TRAVEL MANAGEMENT ROUTE DESIGNATION

Developed Pursuant to Stipulation IV.A. of the Region 3

First Amended Programmatic Agreement

Regarding Historic Property Protection and Responsibilities

New regulations for travel management on National Forest Systems lands (36 CFR §212, Travel Management) require the designation of those roads, trails and areas that are open to motor vehicle use. Designations will be made by class of vehicle and, if appropriate, by time of year. Once such roads, motorized trails, and areas are designated, use of motor vehicles off the designated system will be prohibited. Such a clearly designated system will greatly reduce cross-country motorized use and the development of unauthorized roads and trails. Restricting travel to the designated system of roads, motorized trails, and designated areas will:

- Protect natural and cultural resources
- Enhance public enjoyment of the national forests
- Promote the safety of all users
- Minimize conflicts among the various users of National Forest System lands

Travel management designation does not address road maintenance, repair, closures, decommissioning or re-opening previously closed roads and trails. These activities are separate actions that will require individual Section 106 consultation. The designation will authorize motorized use, however, and this use has the potential to affect historic

properties. In keeping with the Region 3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities (Programmatic Agreement), all unevaluated properties will be treated as if eligible, and therefore considered historic properties for the purposes of this protocol.

Stipulation IV.A.4 of the Programmatic Agreement provides for the development of "Standard Consultation Protocols" for certain classes of undertakings where effects on historic properties and resulting protection and treatment are similar and repetitive. Such protocols specify standard procedures for the identification, evaluation, and treatment of historic properties. In accordance with the Programmatic Agreement, in developing this protocol the Forest Service consulted with the Arizona, New Mexico, Oklahoma, and Texas State Historic Preservation Officers (SHPOs), the Advisory Council on Historic Preservation (Council), and 50 Indian tribes for whom properties within National Forests might have traditional cultural or religious significance.

Once approved by the Forest Service, the Council, and the SHPOs and once formally incorporated into the Programmatic Agreement as Appendix I, the Forests may implement the procedures in this protocol, in lieu of standard consultation in the Programmatic Agreement or the Council's regulations (36 CFR §800), to take into account the potential effects of travel management designations on historic properties.

On Region 3 National Forests there are approximately 54,000 miles of system roads, approximately 37,000 miles of which are currently open for motor vehicle use. There are approximately 8,400 miles of system trails, approximately 2,300 miles of which are currently open for motor vehicle use. On most Forests, however, cross-country travel is not prohibited, with the exception of wilderness areas and similar special areas. Over time, this has led to the creation of numerous unauthorized or user-created roads (the prolific two-tracks) and trails, and many areas where resources are being damaged by cross-country motor vehicle use.

In Region 3, more than 66,500 historic properties have been recorded in surveys of approximately 3,600,000 acres. It is estimated that this represents only about 16% of the total historic properties on Forest Service lands in the Region. Many of these resources are located in or near roads, trails, or areas open for cross-country motorized use.

These impacts are accelerating as recreational use of off-highway vehicles (OHV) has increased in popularity. For example, the number of OHV users in the United States has climbed tenfold in the past 32 years, from approximately 5 million in 1972 to 51 million in 2004. More than 11 million people using OHVs visited national forests and grasslands in 2004.

The Travel Management regulations require that each Forest or District designate a system of roads, trails, and areas that are open to motor vehicle use. The Forest Service has directed that these designations are to be completed by September 30, 2009. The designations, which may be done Forest-wide or by District(s), will include designation of:

- Roads open to motor vehicle use
- Trails open to motor vehicle use
- Areas designated for cross-country motor vehicle use (optional)
- Areas or routes open for accessing dispersed campsites (optional)
  - fixed distances along certain roads or trails for dispersed camping
  - specific routes or spurs to access specific dispersed camping sites
- Areas or routes open for big game retrieval (optional)
  - fixed distances along certain roads or trails during hunting season

PROCEDURES

The Forests shall ensure that the following procedures are carried out:

I. SCOPE.

This protocol covers the designation of roads, trails and areas for motor vehicle use which will be included in a Forest or Ranger District's motor vehicle use map. Management activities such as road maintenance, repairs, closures, decommissioning, or

re-opening previously closed roads and trails will require separate Section 106 compliance, as provided for in the Region -3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities.

II. EXEMPTIONS.

The following are exempt from further Section 106 review or consultation:

A. Existing system roads and trails and their associated constructed features. The FS and the SHPOs agree that designation of existing system roads and trails and their associated constructed features that are already open for motor vehicle use will have little or no potential to affect historic properties. Constructed features include parking areas, shoulders, pullouts, turnouts, trailheads, information kiosks, short system roads or spurs, and other intentionally constructed structures and facilities. If heritage resources are present on these roads, motorized trails, or constructed features, they were likely impacted by the original construction or formation of the road or trail and subsequent maintenance and/or use. The signatories agree that some level of disturbance through continued motor vehicle use on these existing routes can be accepted in situations where the integrity of the portion of a site within the constructed road has already been substantially compromised. This will not preclude the FS from implementing protection measures where unacceptable impacts are occurring or from changing the designation at a later date. Each year, for example, the forest will have an opportunity to print new travel management maps, and forests will have the latitude to change designations and amend the maps at that time.

System roads and trails are defined as those identified as “National Forest System Roads” and “National Forest System Trails” in the FS corporate database system, as defined in the Region 3 Travel Management Rule Implementation Guidelines, dated 06/12/2006. These roads and trails have Forest Service numbers, usually appear on current visitor and travel management maps, and are reported on in the FS Annual Roads Accomplishment Report and similar accomplishment reports.

B. Existing fixed-distance corridors along existing roads where motorized use has previously been authorized in approved Forest Plans or covered by past decisions, except where on-going impacts to historic properties are known or suspected.

C. Pull-off parking adjacent to existing roads, within a vehicle length,

D. Specific limited-use authorizations such as those for game retrieval, fuelwood gathering or other resource procurement, or management of range allotments, for example that are covered by separate NEPA decisions,

E. Decisions not to designate roads, trails, or cross-country travel areas for motor vehicle use, unless the decision will adversely affect an existing road or trail that is considered to be a historic property,

F. Decisions to restrict further travel on existing system roads, trails and areas.

III. SITUATIONS REQUIRING CONSULTATION.

Designation of roads, trails, and areas other than those identified in Section II above. This includes the designation of:

- 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

IV. PUBLIC INVOLVEMENT.

The Travel Management regulations require the Forest Service to provide for public participation in the process of designating roads, trails, and areas for motor vehicle use. Designation decisions will be made by Forest Supervisors or District Rangers working closely with local communities, motorized and non-motorized recreation groups, and other interested parties. Likewise, the Advisory Council's regulations, 36 CFR §800.2(d) and 800.3(e), require the Forest Service to provide for public participation in the Section 106 process. Local units will notify the public of opportunities to participate in travel planning. Each Forest shall use the NEPA scoping process and the procedures in Section II of the Programmatic Agreement to seek and consider the views of the public regarding designation the travel management system.

V. TRIBAL CONSULTATION.

The Forest will use the principles and procedures in Section III of the Programmatic Agreement to ensure that tribes are consulted as early as possible in the planning process, and properties of traditional cultural and religious significance are identified and addressed. If traditional cultural properties are identified, the Forest will consult with the affected tribes regarding inventory, evaluation, effect, and protection or treatment measures. The SHPO will be a party to these consultations if the traditional cultural properties are also archaeological or architectural sites. Tribal issues concerning access to and use of traditional cultural properties will be addressed in the planning and consultation process.

VI. PLANNING.

A. A FS professional cultural resource specialist will be included in or will provide input to inter-disciplinary teams set up to review the Forest or District's existing roads and trails systems and to conduct the NEPA analysis for additions, deletions, or changes to that system, including designation of areas where cross-country travel is authorized.

B. Heritage resource information will be considered when identifying and choosing

among the range of possibilities for the proposed designated travel management system. Known or potential impacts to historic properties, including historic roads or trails, will be one of the criteria considered in determining whether or not specific roads, trails or areas should be designated for motor vehicle use.

VII. INVENTORY REQUIREMENTS.

A. Inventory requirements, priorities, and strategies for road, motorized trail, or travel area designations identified in Section III may vary depending on the nature and potential effect of the proposed designations, and the expected nature and distribution of historic properties based on existing inventory information. The level of need and extent of new field surveys or inspections will be proposed by a Professional Cultural Resource Specialist and approved by the Forest Archaeologist based on the guidelines provided in this section. This stipulation will take the place of pre-consultation with SHPO concerning the level, extent, and design of inventory for the designation of roads, trails, and areas for motor vehicle use. For each Forest or District road, motorized trail, or travel area designation, a FS professional cultural resource specialist will review the proposed travel route designations using the following guidelines.

1. Prefield Research

The Forests will utilize relevant information to assess the potential to affect historic properties and the expected nature and distribution of heritage properties that may be affected. The Forest Archaeologist shall consider the following to determine the need and extent of survey under this protocol:

(a) The expected nature and severity of all associated impacts based on:

- history of use
- current use levels
- expected future use levels
- types and intensity of motorized use
- slope, topography, and soil conditions
- GIS layers and maps including soils, vegetation type, slope

- current condition of the road, trail or area, and level of disturbance
- known incidents of damage to heritage resources
- results of the Travel Analysis Process (TAP)

(b) The expected nature and distribution of heritage resources based on:

- degree of previous surveys for cultural resources
- known site density
- types of sites
- heritage GIS survey and site layers or hard copy survey, NMCRIS, and site atlases
- previous heritage reports and site forms
- cultural resource overviews and planning assessments
- information obtained through tribal consultation and public input, other resource specialists familiar with the project area, permittees or other users
- historic maps, topographic maps, aerial photographs, and ortho-photo quads

2. Field Survey.

(a) Based on the results of the prefield research described under VII.(A)(1) above, the following criteria will be used to determine the relative level of field survey to be conducted:

1. Areas previously surveyed to current standards, as defined in paragraph V.C.2 of the Programmatic Agreement, do not have to be resurveyed.

2. No field survey is required for the portions of roads, trails or areas on 40% or greater slopes, where site densities and impacts are expected to be low.

3. The following areas will require 100% surveys:

- where site density is expected to be high
- where site densities are unknown and expected visitor use or impacts will be high
- where significant historic roads or trails, or historic constructed road features that manifest craftsmanship or special engineering considerations, such as CCC-era culverts or bridges, or other associated historic features that are considered to be historic properties are in the area of potential (APE) effect
- where reroutes or new construction of roads and motorized trails is proposed

4. The following areas may be surveyed at less than 100%:

- where known site density is low
- where prior use has already disturbed the road, motorized trail, or area and continued use is not expected to cause additional significant damage to heritage resources

(b) For areas subject to less than 100% survey, the size and design of the sample surveys shall be determined by the Forest Archaeologist. If no heritage resource concerns are identified following the sample survey, no further survey will be necessary. If during the sample survey it is determined that the site density is high, or because of the types of heritage resources, soil conditions, or other factors heritage resources would be highly susceptible to damage from motor vehicle use, the remaining portions of the road, motorized trail, or area may require 100% survey.

(c) Survey width of 7.5 meters each side of the centerline is the minimum width appropriate for most motorized trails or existing roads. Increase the survey coverage as needed in areas where vehicular use will extend beyond 7.5 meters from the centerline in order to minimize the likelihood that follow-up surveys will be needed in the future. Where new construction of roads is proposed, surveys should encompass a corridor no less than 30 meters on each side of the centerline (60 total meters in width) to cover all turnout ditches, right-of-way clearing and construction areas.

B. Limited subsurface testing within the existing roadbed to gather sufficient information to determine the presence or absence of intact cultural deposits is acceptable under

certain conditions. Limited tests include auguring, trowel testing, and shovel testing and do not require pre-consultation with the SHPO or tribes. For unevaluated sites, these limited tests are part of the inventory process. If intact cultural deposits, features, etc. are encountered, additional testing will stop in the area of the discovery and the results will be documented. For sites that have previously been determined eligible, limited testing in the roadbed should only be undertaken when it appears that there are no cultural deposits in the roadbed, and the testing is used to verify the lack of cultural remains. If intact cultural remains are encountered, additional testing will stop and the results will be documented. Limited testing may not serve as mitigation. For the purposes of this protocol, the consulting parties agree that the limited testing in the roadbed as described in this section will have no adverse effect on the historic property.

VIII. PHASING.

Under certain circumstances it may be necessary to phase or defer the inventory until after the NEPA decision provided that:

- the roads, trails and areas that are subject to phased surveys will not be shown on the maps distributed to the public until after the survey and Section 106 process is completed. These roads, trails and areas will be included in the NEPA analysis and the NEPA decision

- the initial Section 106 consultation report to the SHPO and the NEPA document will include a schedule for the completion of remaining inventories

- the phased inventories will be accomplished within 3 years from date of final agency decision on designation

- the expected nature and distribution of historic properties, the anticipated effects, and proposed phased approach are discussed in the NEPA analysis and in the initial Section 106 consultation report submitted to the SHPO prior to the NEPA decision

- the protection measures contained in Section IX below will be sufficient to protect historic properties

- there are no known public issues or identified tribal concerns regarding historic properties, including traditional cultural properties

During the phased inventory, existing dispersed camping sites and their associated access

routes may be identified as open for camping following the NEPA decision and prior to the completion of the phased Section 106 compliance process under the following conditions:

- where the dispersed camping sites are already disturbed and the Forest Archaeologist agrees that little additional impacts to historic properties is expected in the short term (one to three years), and
- where no known or suspected impacts to historic properties are occurring

Dispersed camping sites with known or suspected impacts to historic properties shall not be identified as open until after the Section 106 compliance process has been completed and mitigation or protection measures have been implemented. If impacts to historic properties cannot be resolved, the camping site shall be closed to camping.

IX. PROTECTION MEASURES.

Forests shall draw from but not be limited to the following protection measures to ensure that adverse effects to historic properties are avoided or minimized:

- dropping proposed motorized road, trail 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 map distributed to the public until after all Section 106 compliance needs are met.

X. RESOLVING ADVERSE EFFECTS.

If the Forest Service finds, in consultation with the SHPO and tribes, that the protection measures outlined in Section IX above cannot be applied and/or the undertaking will have an "adverse effect" on historic properties, the FS shall notify the Council as specified in Section VII of the Programmatic Agreement and shall consult to resolve adverse effects following the procedures in 36 CFR 800.6. If the determination of adverse effect is made after the NEPA decision, as part of a phased survey for example, the FS shall amend its decision if necessary to disclose the effects.

XI. REPORTS.

A. Reports for travel management NEPA analysis and Section 106 consultation will include:

- a brief description of the area under analysis and existing travel routes
- nature of the decision to be made and brief summary of proposed action and alternatives, including ground-disturbing proposed activities
- percent of travel routes inventoried to current standards and brief summary of the nature and distribution of historic properties, including traditional cultural properties, if any, and the results of tribal contacts
- nature and results of any inventories and inspections conducted;
- determinations of effect
- identification of mitigation measures to avoid or minimize effects to historic properties
- recommendations (site-specific protection measures, monitoring etc)
- a statement that future ground-disturbing management practices will be contingent upon completion of the identification and protection of historic properties and compliance with applicable provisions of NHPA. This will include acceptance of the inventory report by the Forest Archaeologist or other FS archaeologist with delegated responsibilities and appropriate SHPO consultation in accordance with Stipulation V.E. of the Programmatic Agreement

B. These reports, along with any monitoring or inspection reports, will be submitted in accordance with Stipulation V.E. of the Programmatic Agreement.

XII. CONSULTATION PROCEDURES.

Where not specifically provided for in this protocol, forests shall use the procedures contained in Section V of the Programmatic Agreement regarding consultation on inventory, evaluation, determination of eligibility and effect, and treatment of historic properties.

XIII. MONITORING.

Monitoring not specified as part of the Section 106 consultation report or NEPA decision document will be conducted as part of the day-to-day activities of the professional cultural resource specialists. When archaeologists are in the field conducting surveys for timber sales or fuelwood sales, for example, they will be using System roads and trails. The archaeologists will use these opportunities to observe and report on motorized vehicle activities, the effectiveness of the protocol, and potential impacts to heritage resources. Any incidents of damage to historic properties from motor vehicle use will be reported, and the archaeologists will draw upon the protection measured outlined in Section IX above to ensure the effects are avoided or minimized until mitigation measures, if needed, are developed and implemented in consultation with SHPO. Results of these informal monitoring activities will be discussed in the annual meetings with the SHPOs as provided for in Section XIII(D) of the Programmatic Agreement.

XIV. DISCOVERY SITUATIONS.

Previously unrecorded properties that are encountered during the course of implementing a ground-disturbing activity associated with travel management shall be protected in the same manner as other eligible or unevaluated properties, using the protection measures in Section IX above. If a Forest determines that an eligible or unevaluated property has

been damaged, the Forest shall halt all activities in the area of actual or possible damage and shall notify SHPO and any affected tribes concerning proposed actions to resolve adverse effects. The SHPO shall respond within 48 hours of notification. The Forest shall carry out the agreed-upon actions.

XV. RELATED ACTIVITIES REQUIRING CONSULTATION.

Subsequent management of designated roads, motorized trails, and motorized areas, including road maintenance, repairs, closures, decommissioning, re-opening previously closed roads and trails, or any MOA developed to resolve adverse effects to a specific historic property within or affected by a road, motorized trail or motorized area, will be subject to separate standard Section 106 consultation as defined in the PA.

XVI. ANNUAL REVIEW.

As part of the Annual Meeting carried out pursuant to the Programmatic Agreement (Stipulation XIII.D), the Forests, the SHPOs, and the Council, if it chooses to participate, shall discuss the activities carried out pursuant to this protocol, reevaluate its procedures, and determine whether continuation, modification, or cancellation is appropriate. Since individual decisions and projects will be submitted to SHPOs for review in accordance with the normal procedures in the Programmatic Agreement, a separate annual report summarizing these activities will not be prepared.

XVII. MODIFICATION.

The Forest Service, Council, or the SHPOs may request modifications to this protocol whereupon the parties will consult to consider such changes. Changes may be made by written consent of the Regional Forester, SHPOs, and Council after appropriate consultation.

XVIII. CANCELLATION.

The Forest Service, Council or the SHPOs may cancel this protocol by providing thirty (30) days notice. The parties will consult during the period prior to cancellation to seek agreement on modification or other actions that would avoid cancellation. In the event the protocol is canceled, the Forests shall comply with the Programmatic Agreement or 36 CFR 800 with regard to individual undertakings that otherwise would be covered by this protocol.

XIX. IMPLEMENTATION.

This protocol becomes effective on the date of the last signature below and may be implemented immediately.

SIGNATURES:

/s/ Lucia M. Turner (for) 8/28/2007

Harv Forsgren Date

Regional Forester, USDA Forest Service – SW Region

/s/ James W. Garrison 9/20/2007

James W. Garrison Date

Arizona State Historic Preservation Officer

/s/ Katherine Slick 9/27/2007

Katherine A. Slick Date

New Mexico State Historic Preservation Officer

/s/ Bob L. Blackburn 9/25/2007

Bob L. Blackburn Date

Oklahoma State Historic Preservation Officer

/s/ F. Lawrence Oaks 9/25/2007

F. Lawrence Oaks Date

Texas State Historic Preservation Officer

/s/ John M. Fowler 9/25/2007

John M. Fowler, Executive Director Date

Advisory Council on Historic Preservation

APPENDIX J

STANDARD CONSULTATION PROTOCOL

FOR LARGE-SCALE FUELS REDUCTION, VEGETATION TREATMENT,

AND HABITAT IMPROVEMENT PROJECTS

The USDA Forest Service (FS) and other federal land managing agencies are directed by Congress to implement an accelerated, multi-year program of large-scale hazardous fuels reduction, vegetation treatment, and habitat improvement projects under a variety of legislation including the Healthy Forests Restoration Act of 2003 and the American Recovery and Reinvestment Act of 2009 (ARRA).

Improving forest health, reducing the threat of catastrophic wildfire to communities and forests across the landscape, and moving the nation closer to energy independence through the use of woody biomass will provide jobs, a primary emphasis of ARRA.

The Federal Fire Policy emphasizes that wildland fire is a critical natural process that must be reintroduced into the ecosystem. Currently, unmanaged fuel loads in many areas support large, hot, uncontrolled, and devastating wildfires that destroy life and property, including historic properties. Mechanical treatments, such as thinning and timber sales, in combination with prescribed fire will reduce fuel loading and stand density in areas adjacent to the Wildland Urban Interface, for example, so that wildfires approaching these areas will "go to the ground" where they can be effectively and safely suppressed.

Fuels reduction projects and other vegetation treatment and habitat improvement projects will also help protect historic properties from the devastating effects of catastrophic wildfires and the associated suppression activities and subsequent erosion. Although beneficial to historic properties over the long-term, these projects are undertakings that have the potential to affect historic properties, particularly fire-sensitive sites, and steps should be taken to avoid or minimize those effects.

Stipulation IV.A.4 of the Region 3 First Amended Programmatic Agreement Regarding Historic Property Protection and Responsibilities (Programmatic Agreement) provides for the development of "Standard Consultation Protocols" for certain classes of undertakings where effects on historic properties and resulting protection and treatment are similar and repetitive. Such protocols specify standard procedures for the identification, evaluation, and treatment of historic properties. In accordance with the Programmatic Agreement, in developing this protocol the Forest Service consulted with the Arizona, New Mexico, Oklahoma, and Texas State Historic Preservation Officers (SHPOs), the Advisory Council on Historic Preservation (Council), and 50 Indian tribes for whom properties within National Forests might have traditional cultural or religious significance.

Once approved by the Forest Service, the Council, and the SHPOs and once formally incorporated into the Programmatic Agreement as Appendix J, the Forests may implement the procedures identified in this protocol in lieu of standard consultation procedures in the Programmatic Agreement or the Council's regulations, when taking into account the potential effects of these types of projects on historic properties. This protocol will fully supersede all provisions of the 2004 First Amended Programmatic Agreement Among the USDA Forest Service, Southwestern Region, Arizona State Historic Preservation Officer, New Mexico State Historic Preservation Officer and The Advisory Council on Historic Preservation Regarding Wildland Urban Interface And Other Large-Scale Hazardous Fuels Reduction Projects.

STIPULATIONS

The FS shall ensure that the following stipulations are carried out:

1. SCOPE. This protocol covers ARRA projects, WUI projects, and other large-scale (larger than 1,000 acres) fuels reduction, vegetation treatment, and habitat improvement projects. Activities covered by the protocol include: hand thinning; mechanical thinning; use of equipment such as Hydro-ax, Agra-ax, brush crushers and brushhogs; timber sales; slash disposal, including lopping and scattering, chipping, pile burning, and windrow or jackpot burning; broadcast burning; and fuelwood use, including free use, fuelwood permits, and commercial fuelwood sales.

2. INTERNAL COORDINATION AND TRACKING. The FS shall ensure that heritage specialists are brought into the planning process for projects as early as possible so that the potential effects to cultural resources can be evaluated. The FS shall also ensure that a system is in place to track implementation of heritage resource protection and monitoring requirements, and that necessary communication and coordination between heritage and fuels treatment and/or other appropriate specialists will continue throughout the implementation of projects carried out under this protocol.

3. TRIBAL CONSULTATION. The FS shall follow the procedures for tribal consultation contained in Stipulation III of the Programmatic Agreement. As early as possible in the planning process, the FS shall consult with American Indian tribes to determine if any properties of traditional cultural or religious importance are present within the project's area of potential effect. If specific properties are identified, the FS shall consult with the appropriate tribes concerning evaluation, determination of effects, and protection measures. If agreement cannot be reached or if adverse effects cannot be avoided, the FS shall consult case-by-case with interested tribe(s) and the SHPO as provided for in the Programmatic Agreement.

4. PUBLIC INVOLVEMENT. The FS shall use the procedures in Stipulation II of the Programmatic Agreement to seek and consider the views of the public.

5. IDENTIFICATION. The Forest Archaeologist shall determine or approve the level of field survey for each project using the guidelines in Section I of this protocol. Alternatively, a Forest or Forests may opt to develop a Forest-wide survey strategy for WUI and other large-scale fuels reduction, vegetation treatment, or habitat improvement projects in consultation with the SHPO and thereby further eliminate the need for individual project notifications for sample surveys.

6. EVALUATION. The FS and the SHPOs agree that certain classes of properties (Appendix B of the Programmatic Agreement) may be determined eligible for the National Register of Historic Places for Section 106 purposes based on survey information without further case-by-case SHPO consultation. The FS shall ensure that properties that will be affected by an undertaking are evaluated conclusively for eligibility for inclusion in the National Register by applying the National Register criteria (36 CFR 63) in consultation with the SHPO and any Indian tribe that attaches religious and cultural significance to the properties. Forests are encouraged to make eligibility determinations for other properties in consultation with the SHPO whenever possible; however, the eligibility of a property may remain unresolved, provided it is treated as eligible and the property will not be affected by the undertaking.

7. EFFECT. Following completion of the survey approved by the Forest Archaeologist in accordance with Section I, the FS shall determine the effects of the project on historic properties:

a) No Historic Properties Affected. If no properties are identified within the area of potential effect or if properties are present and all eligible and unevaluated properties are avoided through application of the site protection measures in Section II, and provided that none of the conditions requiring case-by-case consultation specified in the Programmatic Agreement (Stipulation V.E.6) apply, a determination of "No Historic Properties Affected" will be made for the project in accordance with 36 CFR 800.4(d)(1). This will include only those projects in which a 100% survey is conducted and all eligible and unevaluated properties will be protected.

b) No Adverse Effect. If portions of the area of potential effect have not been surveyed because an approved sample survey strategy was implemented, or if eligible and/or unevaluated properties are present and will be affected, but through application of the protection measures in Section II potential adverse effects on eligible and unevaluated properties have been minimized to the extent that they do not meet the criteria of Adverse Effect contained in 36 CFR 800.5(a)(1), and provided that none of the conditions requiring case-by-case consultation specified in the Programmatic Agreement (Stipulation V.E.6) apply, a finding of "No Adverse Effect" will be made for the project in accordance with 36 CFR 800.5(b).

c) Adverse Effect. If the Forest Archaeologist determines that one or more properties may be adversely affected, the FS shall consult case by case on the project in accordance with the Programmatic Agreement (Stipulation V.E.5 and 6).

8. PROTECTION. The Forest Archaeologist shall draw from the protection measures in Section II to ensure that effects to historic properties are avoided. Site protection requirements shall be documented in the inventory report and on the FS Inventory Standards and Accounting (IS&A) form.

9. MONITORING. Terms and conditions of Section 106 compliance shall include appropriate post-project monitoring requirements as determined necessary by the Forest Archaeologist, to assess the effectiveness of protection measures. One purpose of post-treatment monitoring is to gather data that will be used to improve planning for protection of heritage resources in future projects. For prescribed fires, Forests are encouraged to assess the effects of prescribed fire on both fire-sensitive and non fire-sensitive sites to expand available information on the effects of prescribed fire on historic properties. All site monitoring shall be documented on a site update form and/or monitoring report as appropriate. Each Forest shall maintain an updated list of sites/projects to be monitored which will include the date monitoring is completed and the monitoring results.

10. INVENTORY REPORT. Inventory reports shall conform to the Programmatic Agreement (Stipulation V.C.4). The FS shall also ensure that reports include a description of all planned activities, equipment to be used, expected impacts, and a detailed discussion and rationale for the survey strategy if less than 100%.

11. APPROVAL. When all of the above stipulations are complied with and the inventory report has been approved by the Forest Archaeologist, and provided that the undertaking will not have an adverse effect on historic properties and none of the conditions requiring case-by-case consultation specified in the Programmatic Agreement (Stipulation V.E.6) apply, the Forest Supervisor may approve the report and proceed with the undertaking, provided all site-specific protection measures are implemented. The Forest Supervisor shall forward a copy of the report, IS&A form, and associated site forms to the SHPO within 30 days, unless otherwise agreed to with the SHPO.

12. CASE-BY-CASE CONSULTATION. The FS shall follow the Programmatic Agreement (Stipulation V.E.6) for direction on when case-by-case consultation is necessary.

13. DISCOVERY SITUATIONS. There is the potential for encountering previously unrecorded properties or for affecting properties in an unanticipated manner during the course of these projects. Previously unrecorded properties that are encountered during the course of a project shall be documented and protected in the same manner as other properties, using the protection measures in Section II. If the FS determines that a

property has been damaged, the FS shall halt all activities that could result in further damage to the property and shall notify the appropriate SHPO concerning proposed actions to resolve adverse effects. The SHPO shall respond within 48 hours of notification. The FS shall carry out the agreed-upon actions. If human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered, the provisions of NAGPRA (25 USC 3002(d)) and NAGPRA regulations (43 CFR 10) shall be followed. All work in the immediate vicinity of the discovery shall stop, and the FS shall take all reasonable steps necessary for the protection of the remains and objects.

14. PHASING. A phased approach should be used only when a large-scale project is to be implemented in phases spanning more than one fiscal year and it is not reasonably possible to complete Section 106 compliance for all aspects of the undertaking prior to reaching a NEPA decision. Where deemed necessary by the Forest Supervisor, consultation for such a project may be carried out in two or more phases corresponding to the implementation phases of the project. In this phased approach, a final NEPA decision on the project may be made prior to completion of the identification and evaluation of properties in the entire project area provided that all of the following requirements are met:

g. none of the conditions in the Programmatic Agreement Stipulation V.E.6 apply to the project;

h. the requirements in Stipulations 2-8 in this protocol have been completed for the first phase of the project or a justification has been provided to the SHPO as to why completion of the first phase is not feasible;

i. an initial Section 106 compliance report and signed IS&A form are completed prior to the NEPA Decision and clearly state that the identification and protection requirements of this protocol shall be completed prior to the authorization of on-the-ground work in each phase of the project

j. the expected nature and distribution of properties in the entire project area and anticipated effects are discussed and considered in the initial project-wide Section 106 compliance report and in the NEPA analysis;

k. the protection measures in Section II will be sufficient to protect properties in the entire project area, and;

l. the NEPA decision document clearly states that initiation of work in any phase of the project will be contingent upon completion of the identification and protection of historic properties and compliance with applicable provisions of NHPA in accordance with this protocol.

If the FS subsequently determines that adverse effects on historic properties in any phase of the project cannot be avoided, the FS shall consult with the SHPO and other consulting parties in accordance with the Programmatic Agreement (Stipulation V.E.5 and 6) and will amend its decision if necessary to disclose the effects.

15. ANNUAL REVIEW. As part of the Annual Meeting carried out pursuant to the Programmatic Agreement (Stipulation XIII.D), the Forests, the SHPO, and the Council, if it chooses to participate, shall discuss the activities carried out pursuant to this protocol, re-evaluate its procedures, and determine whether continuation, modification, or cancellation is appropriate.

16. REVISIONS AND AMENDMENTS. Any signatory to this protocol may request that it be revised or amended, whereupon the parties shall consult to consider the change. Changes may be made by written consent of the Regional Forester, SHPOs, and Council after appropriate consultation.

17. TERMINATION. Any signatory to this protocol may terminate it by providing thirty (30) days notice to the other parties. The signatories will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, the FS shall comply with the Region's Programmatic Agreement, or 36 CFR 800, with regard to individual undertakings that otherwise would be covered by this protocol. Termination by an individual SHPO shall only terminate the application of the protocol within the jurisdiction of that SHPO.

18. EXECUTION. Execution and implementation of this protocol satisfies the Forest Service's Section 106 responsibilities for all WUI and ARRA projects and other large-scale fuels reduction, vegetation treatment and habitat improvement projects in the Region that are treated in conformance with the stipulations herein.

19. IMPLEMENTATION. This protocol becomes effective on the date of the last signature below and will be implemented immediately.

SIGNATURES:

_/s/ Corbin L. Newman Jr._____ _12/23/2009_____

Corbin L. Newman Jr., Regional Forester Date

USDA Forest Service, Southwestern Region

_ /s/ James W. Garrison_____ _1/22/2010_____

James W. Garrison, State Historic Preservation Officer Date

State of Arizona

_/s/ Jan Biella_____ _1/4/2010_____¬¬___
Jan Biella, Interim State Historic Preservation Officer Date
State of New Mexico

_/s/ Bob Black_____ _2/12/2010_____
Bob L. Blackburn, State Historic Preservation Officer Date
State of Oklahoma

_/s/ Mark Wolfe_____ _1/14/2010_____
Mark Wolfe, State Historic Preservation Officer Date
State of Texas

_/s/ Ralston Cox_____ _1/27/2010_____
for John M. Fowler, Executive Director Date
Advisory Council on Historic Preservation

APPENDIX J

SECTION I

HERITAGE RESOURCE SURVEY STRATEGIES FOR LARGE-SCALE FUELS REDUCTION, VEGETATION TREATMENT, AND HABITAT IMPROVEMENT PROJECTS

The following guidelines will be used to determine survey strategies under this protocol.

Pre-field Research

The Forests will utilize relevant information to assess the project's potential to affect heritage properties and the expected nature and distribution of historic properties that may be affected.

Expected nature and severity of project impacts (this should include consideration of all planned activities and entries) based on:

- type and intensity of mechanical treatment
- type and intensity of prescribed burn, including fuel loading and fire prescription
- type and intensity of fuelwood use
- other associated ground disturbing activities

Expected nature and distribution of heritage resources based on:

- heritage GIS survey and site layers or hard-copy survey and site atlases
- previous heritage reports and site forms
- cultural resource overviews and planning assessments
- information obtained through tribal consultation and public input
- information provided by other resource specialists familiar with the project area
- topographic maps, aerial photographs, ortho-photo quads
- other available GIS layers and maps including soils, vegetation type, slope
- determination of known/expected fire-sensitive sites

Field Survey

Not all situations will require 100% survey. In most cases, the Forest Archaeologist will be able to determine the level of survey needed based on the following guidance. Where not specifically required below, forest archaeologists are encouraged to discuss sampling survey designs with SHPO. The following will guide the identification of areas selected for survey and the level of survey coverage.

1. Areas previously surveyed to current standards, as defined in paragraph V.C.2 of the Programmatic Agreement, do not have to be resurveyed.

2. Activities conducted on slopes greater than 40% may or may not be surveyed at the discretion of the Forest Archeologist without prior SHPO consultation.

3. For activities conducted within areas that were previously disturbed by chaining, discing, plowing, windrowing, crushing, or other extensive ground disturbing treatments, a sample survey strategy may be approved by the Forest Archaeologist without prior consultation with the SHPO. The nature, degree and extent of previous ground disturbing activities and the likelihood of finding cultural resources or locations within the treated areas that remain undisturbed shall be considered when making the decision to survey at less than 100%. This information will be documented and discussed in the survey report.

4. Hand thinning. Activities involving hand cutting and /or thinning, with no use of mechanized equipment and no follow-up prescribed burning, are low impact activities, and may or may not be surveyed at the discretion of the Forest Archeologist without prior SHPO consultation.

5. Prescribed burns. Surveys for prescribed burn areas will include all locations likely to contain fire-sensitive sites based on pre-field research, expected fire behavior, and other relevant data. Additional survey may be conducted at the Forest Archeologist's discretion. The survey strategy shall identify the types of sites that are considered fire-sensitive for each prescribed burn area, using the guidelines in Section III of this protocol. This should include both known fire-sensitive sites and other sites considered fire-sensitive for the specific burn based on fuel loading, site characteristics, and expected fire behavior. If existing inventories indicate the presence or likelihood of fire-sensitive properties throughout the area of potential effect, the area will be surveyed 100% or a proposed sample survey strategy will be submitted to the SHPO for review in accordance with the Programmatic Agreement (Stipulation V.C.3).

6. Other Fuels Reduction, Vegetation Treatment, and Habitat Improvement Projects. Except for the provisions in 1 through 3 above, all high impact treatments resulting in intensive ground disturbance that would likely adversely affect any historic properties that may be located in the area of potential effect will receive 100% survey. These

treatments include but are not limited to:

- construction of roads, landings and skid trails
- intensive mechanical treatments: machine piling, windrowing, chaining, plowing, mechanical crushing
- clearcuts
- timber sale cutting units
- hand and mechanical fire line construction
- staging areas
- constructed safety zones
- installation of water bars and other constructed erosion control features

For other mechanical fuels reduction, vegetation treatment, and habitat improvement projects with potential impacts that are not considered to be high impact treatments, including but not limited to pre-commercial thinning of small diameter trees and fuelwood areas dispersed over a large area (e.g. District-wide), a sample survey strategy may be approved by the Forest Archaeologist without prior consultation with the SHPO if existing inventories indicate the site density in the area of potential effect is lower than the average site density for the forest and the level of impact is such that the Forest Archaeologist determines that it is unlikely that any historic properties that may be present outside the surveyed areas will be adversely affected by the activity. Information concerning the nature of the undertaking, site density, and evaluation of potential effects that led to this determination will be discussed in the survey report. If existing inventories do not indicate the site density is lower than the forest average, or if the Forest Archaeologist determines that the undertaking will result in intensive ground disturbance, the areas will be surveyed at 100%, except for the provisions in 1 through 3 above, or a proposed sample survey strategy will be submitted to the SHPO for review in accordance with the Programmatic Agreement (Stipulation V.C.3).

7. Any deviation from the above survey procedures that involves less than 100% survey will require prior SHPO consultation in accordance with the Programmatic Agreement (Stipulation V.C.3).

APPENDIX J

SECTION II

AGREED-UPON STANDARD SITE PROTECTION MEASURES

Various combinations of the following protection measures may be approved by the Forest Archaeologist to protect sites for projects listed in this protocol without additional SHPO consultation.

Prescribed Burning

Protect fire-sensitive sites:

- Exclude from project area
- Hand line
- Black line
- Wet line
- Foam retardant
- Structural fire shelter
- Remove heavy fuels from site by hand
- Prevent in-situ heavy fuels that cannot be removed from ignition (e.g., flush-cut & bury stumps)
- Implement same protective measures for future maintenance burns.

Protect selected other sites from burning (optional). Allow burning over non fire-sensitive sites provided:

- No ignition points within site boundaries
- No staging of equipment within site boundaries
- No slash piles within site boundaries.

Allow construction of safety zones and additional lines in 100% surveyed areas, with archaeological monitoring as appropriate to assure historic properties are avoided.

Thinning, Hand and Mechanical Treatments

No treatments or ground disturbance within site boundaries -or-

Allow treatments within site boundaries, provided:

- Cutting is accomplished using hand tools only
- Large diameter trees are felled away from all features
- materials removed from the site are removed by hand
- No dragging of logs, trees, or thinned material across or within site boundaries.
- No use of vehicles or other mechanized equipment within site boundaries.
- No staging of equipment within site boundaries.
- No slash piles within site boundaries.

Fuelwood Sales

No fuelwood cutting or vehicles within site boundaries -or-

Allow fuelwood cutting within sites provided that:

- no vehicles allowed within site boundaries
- No dragging of logs, trees, or cut material across or within site boundaries
- materials removed from the site are removed by hand.

Allow fuelwood cutting in areas of large, continuous, low-density artifact scatters that cover large portions of a landscape provided that:

- all features and artifact concentrations are recorded and avoided
- use of vehicles is prohibited during wet ground conditions
- periodic monitoring is used to assess impacts and if impacts are noted, fuelwood cutting will be prohibited in the area.

The Forest Archaeologists may approve additional measures to further protect sites.

APPENDIX J

SECTION III

FIRE-SENSITIVE SITES

A review of available literature on the effects on fire on cultural resources and on the experience of Forest Service heritage resource specialists and the SHPO indicates that there are two categories of fire-sensitive sites. The first consists of sites long-known to be vulnerable to the effects of even low-temperature fires and/or light fuel loads, such as sites that contain organic materials, exposed wooden architecture, etc. The second group includes sites that have generally been considered to have less risk for fire effects in most situations, including prehistoric and historic sites with deeply buried cultural deposits; prehistoric and historic artifact scatters; and prehistoric and historic sites with non-flammable surface features. However, depending on field conditions -- especially fuel loading -- as well as specific site characteristics and expected fire behavior, these other site types may be fire-sensitive in certain fuels reduction projects.

Known Fire-Sensitive Site Types in the Southwestern Region:

- Historic sites with standing, or down wooden structures or other flammable features or artifacts
- Rock art sites (depending on rock type, exposure, fuel type, and fuel loading)
- Cliff dwellings
- Prehistoric sites with flammable architectural elements and other flammable features or artifacts
- Prehistoric sites with exposed building stone of soft or porous material such as volcanic tuff
- Culturally modified trees, including aspen art and peeled/scarred trees
- Certain traditional cultural properties (based on consultation with tribes)

Other Project-Specific Fire-Sensitive Sites:

- Other sites, based on local field conditions and Forest-specific concerns
- Other sites, based on consultation with SHPO staff
- Other sites, based on consultation with fire management staff, fire behavior

specialists or fire effects researchers

Forest Archaeologists will use site assessment and monitoring data, and will consult with fire management staff, to identify known and other project-specific fire-sensitive sites for individual Forests or project areas. Fire-sensitive sites officially determined ineligible for the National Register of Historic Places do not require protection under Section 106.

APPENDIX J

SECTION IV

DEFINITIONS

1. Black Line. A fireline created by burning the organic matter and then extinguishing the fire.

2. Broadcast Burn. Broadcast burning uses fire over a designated area to consume natural or activity slash that has not been piled or windrowed. Broadcast burning may be used separately or in conjunction with mechanical methods such as thinning. Broadcast burns may be ignited by hand, by "terra-torches", torches mounted on 4-wheelers or on a flat-bed truck, or with aerial ignition. Preparation for the burn may include line building, both by hand and machine.

3. Burn Plan. A detailed plan for conducting a prescribed burn that identifies the burn units, fire control methods, and weather condition criteria.

4. Chipping - In the chipping process, slash is forced through a chipping machine, reducing the larger pieces of slash to small chips that are spread over the site to be burned at a later date, or left on site to naturally decompose

5. Crushing - Crushing involves dragging a large drum with protruding spokes or spikes over the vegetation, effectively breaking the fuel into smaller pieces. Another form of crushing uses a "brush crusher" in which a piece of equipment similar to a "weed-whacker" is attached to a tractor. The "brush crusher" is able to reduce the height of vegetation from 4' to 6' down to 6" in height. Both of these pieces of equipment are pulled or transported by either rubber tire tractors, or rubber or metal track dozers. The "brush crusher" may operate on up to a 60% slope.

6. Federal Fire Policy. The Federal Wildland Fire Management Policy signed by the Secretaries of Agriculture and Interior following the 1994 wildfire season. The Federal Fire Policy guides and provides for the coordination of fire management activities of the of the Forest Service, National Park Service, Bureau of Indian Affairs, Bureau of Land Management, U.S. Fish and Wildlife Service and the National Biological Service.

7. Fire Prescription. Measurable criteria that define conditions under which a prescribed fire may be ignited, set prescriptive parameters (rate of spread, intensity, flame length, etc.), guide selection of appropriate management response, and indicate other required actions.

8. Fireline. A narrow, linear strip, cleared of vegetation to dirt that inhibits and/or contains the spread of fire. Firelines vary in width from one foot to over 10 feet, with

most being two feet wide or less.

9. Fuel loading. The nature and amount of accumulated fuels which contribute to the intensity and duration of a fire.

10. Fuelbreak. An area adjacent to or surrounding a Wildland Urban Interface area or other protected area, where thinning and other treatments are used to substantially reduce hazardous fuels. Fuelbreaks will vary in width according to the fuel profile and topography.

11. Hazardous Fuels Reduction. Activities to decrease fuel loading and stand density to a manageable degree to reduce crown fires. Treatments include creation of fuelbreaks, thinning, and disposal of fuelbed materials using mechanical or non-mechanical means.

12. Hydro-Ax And Agra-Ax - The Hydro-ax and Agra-ax are large cutting tools attached to a "Bobcat" type tractor. They are used in the pinyon/juniper type, cutting trees off at the ground level. The trees are usually left to lay where they fall, assisting in soil retention.

13. Inventory Standards and Accounting (IS&A) Form. FS form (R3-FS-2300-4) which serves as the cover sheet for inventory reports and includes conditions of Section 106 compliance, such as site specific protection measures and monitoring requirements.

14. Lopping And Scattering - Thinned areas not piled may be "lopped" to reduce fuel slash heights and then broadcast burned. Lopping consists of cutting smaller branches off the main stem so the height of the slash layer is reduced, which in turn allows for a less intense fire if the area is broadcast burned.

15. National Fire Plan. The report, Managing the Impacts of Wildfires on Communities and the Environment, A report to the President in Response to the Wildfires of 2000, prepared by the Secretaries of Agriculture and Interior. The report calls for action and funding in five key areas: Firefighting; Restoration and Rehabilitation of Burned Areas; Hazardous Fuels Reduction; Community Assistance; and Coordination and Monitoring.

16. Pile Burning - Pile burning disposes of hand or machine-piled slash. Piling the slash and burning during cooler, wetter, or winter conditions reduces the chance of escape and lessens the potential for damage to the remaining vegetation on site. Piles are normally ignited by hand using fuses or drip torches.

17. Prescribed Burn. A prescribed fire ignited by management to meet specific objectives. A prescribed burn may involve broadcast burning over an entire area or burning of thinning slash that has been piled or windrowed.

18. Thinning. Thinning reduces stand density by removing stems in the understory,

midstory, and overstory. Thinning actions will vary between fuelbreaks and areas surrounding fuelbreaks.

- PRECOMMERCIAL THINNING – Pre-commercial thinning involves hand thinning of smaller diameter materials. Small material will be piled, while larger material will be utilized for personal fuelwood or sold for commercial fuelwood. Piles will be burned in the fall and winter season and potentially during the summer if conditions become suitable. The actual piling of the material may be accomplished by hand or machine, where equipment such as dozers and small tractors will haul the material to piles. Slash is also pushed or dragged into windrows. Some slash may be "rough-piled" or "jackpot piled" where heavier concentrations of fuel are left where they fall and are burned on site.

- COMMERCIAL THINNING – Commercial thinning, accomplished through timber sales, involves larger materials. Material that is large enough for commercial thinning (merchantable timber), may be removed to a landing using a rubber-tire skidder, or tracked vehicle. Where slopes exceed 30%, tracked skidders are used more frequently because of their maneuverability. Whole tree skidding methods move the entire tree to the landing, and then remove the branches, concentrating the slash where it can be utilized as fuelwood or burned.

19. Wetline. A fire line constructed using water or foam, intended to prevent the advance of fire.

20. Wildfire. An unwanted wildland fire.

21. Wildland fire. Any non-structure fire, other than prescribed fire, that occurs on undeveloped land.

22. Wildland Urban Interface. Those areas of resident populations of imminent risk from wildfire, and human developments having special significance. These latter areas may include critical communications sites, municipal watersheds, high voltage transmission lines, observatories, church camps, scout camps, research facilities, and other structures that, if destroyed by fire, would result in hardship to communities. These areas encompass not only the sites themselves, but also the continuous slopes and fuels that lead directly to the sites, regardless of the distance involved.