Big 6 AMP

Cultural Resources

Prepared by:

Rick Laurent Cultural Resource Staff East Zone	5/08/2011 Date
Bill Matthews Cultural Resource Staff West Zone	5/3/2011 Date

Introduction and Overview of Issues

This discussion/document addresses the renewal of ten-year-term grazing permits and vegetation management by mechanical treatment, prescribed fire; hazardous fuel reduction, aspen management, and spike moss treatments within the area noted on the project map, Figure 1-1. The focus of the analysis is to discuss and describe the affected environment and environmental consequences, positive or negative, in relationship to cultural resources. The analysis is tied to legal direction and requirements of a number of laws, particularly, the National Historic Preservation Act (NHPA), and especially, Section 106, as well as a programmatic agreement (PA) signed in 2009 by the Forest, Wyoming State Historic Preservation Office (SHPO), and the Advisory Council on Historic Preservation (Council).

The key indicator of this study, pursuant to 36 CFR 800, is cultural resources that are eligible to the National Register of Historic Places, called historic properties regardless of type or age that would or could be impacted by implementation of any alternative. In general, historic properties are to be managed and protected by the Federal Agency whose land they are located on. Normally, a cultural resource has to be eligible in order for impacts, by alternative, to be considered under the NEPA process.

This study will include the alternatives to the proposed action relative to issues that have been developed as described in Chapter 1. A brief discussion of issues and any potential relationship to cultural resources during the life of the proposed project(s) follows (Indicator equals the number of historic properties adversely impacted by proposed actions.):

- Issue 1, vacant allotments: N/A
- Issue 2 – aspen stands: Follow requirements under the Forest's PA
- Issues 3 and 4 – riparian and upland vegetation: N/A
- Issue 6 – wildlife, fish and plant TES species, MIS, and species of local concern: N/A
- Issue 6A – Bighorn sheep: N/A
- Issue 7 – water quality: N/A
- Issue 10 – heritage resources: Analysis has shown that present grazing has, and would continue to impact a number of cultural resources. Additionally, regardless of which Alternative is selected, cultural resource mitigations are needed.

Affected Environment (Heading 2)

Beaver Creek Watershed Grazing: The process followed for renewal of ten-year-term grazing permits is contained in a Programmatic Agreement among (PA) the Bighorn National Forest, Wyoming State Historic Preservation Officer (SHPO), and Advisory Council on Historic Preservation (ACHP/Council) signed in 2009. A copy of the PA dealing with grazing is included in the cultural resource specialist report as Attachment 1.

Fourteen allotments are included in this analysis. Twelve are within the watershed, while two isolated allotments (Matthews Ridge C&H; South Park C&H) were included, as they did not fall into any specific watershed. Six of the allotments are for cattle, while the other allotments are for sheep. Grazing on these allotments began just before or at the turn of the twentieth-century.

Under the criteria of the PA, approximately 347 acres were selected for Class III inventory, and it is estimated that over 7,000 additional acres have been previously Class III. The areas selected for inventory are comprised of one hundred and fifteen 2.5-acre blocks and six 10-acre blocks. The inventory was conducted by Forest Service personnel, and occurred during the summer s of 2006 and 2007 (Matthews 2007). Wyoming SHPO concurred on the determinations made by the Forest Service in the report by letter dated July 2, 2008.

Fifty-one sites are located in the analysis area. Forty-six of the sites are prehistoric, four historic, and one site has both a prehistoric and historic component. Eleven of the sites are eligible to the National Register of Historic Places (NRHP), and the remaining sites are ineligible. Site-specific data, such as site type and status by Smithsonian number is summarized in Table 1 of the specialist report.

Fourteen sites have incurred past impacts from grazing actions, while presently five sites are incurring impacts. Of the five sites, the impacts on three sites are adverse under the National Historic Preservation Act (NHPA), and mitigation measures have been designed to lessen the impacts to an acceptable level. The sites are 48BH196, 48BH3588, and 48BH3736. All are prehistoric camps.

Beaver Creek Watershed Vegetation Management (prescribed fire, aspen treatment, and conifer encroachment)*:* The cultural resource process for various vegetation management activities is defined in the Forest's PA. A copy of the direction is found in the cultural resource specialist report as Attachment 2. Important elements of the PA include phase compliance, and that all post NEPA implementation plans, at a minimum, have to attain a *no adverse effect* determination by the Forest Service and SHPO.

The analysis area for the proposed vegetation management project equals approximately 20,710 acres. Seven previous inventories have been completed within the proposed burn boundary, and approximately 5,070 acres or 24.5% has been inventoried at a sufficient level. A large proportion of the project is on slopes greater than 15% (15,276 acres). This is noteworthy as in general, the Forest's PA exempts inventory on 15% or greater slope.

The past inventory reports document the presence of 34 sites (Matthews 2011). Twenty-seven are prehistoric, 5 are historic, and 2 sites have both a historic and prehistoric component. Of these 34 sites, 22 are ineligible to the NRHP, 6 are unevaluated, and 6 are considered eligible to the NRHP. Specific site data is located in Table 2 of the specialist report.

Twenty-two of the 27 prehistoric sites are limited to surface lithic scatters. Five of these prehistoric sites are eligible to the NRHP. The five historic sites include two cabins, two mines, and a dump. The historic sites are ineligible to the NRHP. One of the duel component sites is eligible to the NRHP, while the remainder is not.

Six sites within the analysis area are unevaluated at this time. A review of the written documentation, on these sites, strongly suggests the sites are ineligible. However, in accordance with the PA, the sites will be evaluated in the field to determine their eligibility, and if eligible, any future protection measures.

Overall, based on the Class I analysis, and the Forest's site location model, the potential to find an additional eligible prehistoric site is low. Any additional prehistoric sites found would most likely be small surface lithic scatters or isolated finds. However, because a large portion of the project area is located along an escarpment, there is some potential that rock art panels, vision quest beds, or native burials could be found.

The probability of locating any eligible historic site is considered extremely low. The primary historic activity in the project area has been grazing, and any significant site would have been recorded during the inventory for term grazing permit renewals. It is predicted that the most likely historic cultural resources to be found would be remnant cabins, sheepherder camps, dumps, or isolated artifacts.

Goose Creek Watershed Grazing: Seven allotments are located in the analysis area. They are Big Goose, Little Goose, Little Goose Canyon, Tourist, Stull--Antler Creek Division, Walker Prairie, and Rapid Creek Allotments. Historic documents note that grazing has occurred in these allotments for at least 100 years.

Approximately 1,363 acres met the requirements for survey under the terms of the 1995 Memorandum of Understanding (USDA), and the present PA. The select areas ranged from 2.5 to 40 acres in size, and fieldwork took place in the summers of 2006 and 2007. As a result of field observation, the final total of acres inventoried equaled 1,475. It is estimated that an additional 1,415 acres in the project area were previously Class III inventoried. All work was completed by archaeologists working for the Bighorn National Forest, Sheridan, Wyoming (Sutton 2006; Laurent 2008b).

Five new sites were recorded and evaluated during the inventory, while 35 previously recorded sites are located in the areas selected for inventory under the Forest's agreement with SHPO. Four of these sites required field evaluations, and the remaining sites were reviewed in the field, and/or from present documents to determine the potential for impacts by the proposed project.

The inventory report was sent to SHPO on April 16, 2008. The report included the Forest's determinations on site eligibility and potential impacts in relationship to re-issuance of ten-year-term grazing permits. Wyoming SHPO concurred on the Forest's determinations, document by letter dated April 25, 2008 that include additional data collection on two sites. The data needs were completed during the summer of 2008, and a report was sent to SHPO in 2010 (Laurent). SHPO concurred on the findings by letter dated November 22, 2010 (SHPO # 1110JRD091).

The inventory results documented 21 prehistoric sites, 15 historic sites, and 4 sites that have both a historic and prehistoric component present located in the selected areas for inventory in the Goose Creek Watershed. Seventeen of the 21 prehistoric sites (ca. 81%) have received some level of impact from past grazing actions, and 5 (ca. 29%) of the prehistoric sites are no longer considered eligible to the NRHP due to the past impacts. The remaining prehistoric sites, regardless of impacts, would have never met the criteria for eligibility. Two prehistoric properties have been and are being impacted by present range management. In accordance with the Forest's present PA, the 2 prehistoric properties being impacted

and/or have a potential to incur future impacts have had a treatment plan created to lessen the occurring impacts and/or potential future effects.

No evidence was noted for past or present impacts to historic sites in the project area. A summary of pertinent data for individual sites is located in Table 3 of the Cultural Resource Specialist Report prepared for this EIS.

Goose Creek Watershed Vegetation Management (spike moss): Spike moss treatment will occur in the Rapid, Big Goose and Tourist allotments. Total project size equals 867 acres. Seven previous inventories have been completed, and sufficient inventory totals 517 acres or 60% of the area. Sixty additional acres have been inventoried at a Class II level for a total of 567 acres or 65% (Laurent 2011).

The past inventory reports document the presence of sixteen sites (Laurent 2011). Ten are prehistoric and 6 are historic, and of these sites ten are ineligible to the NRHP, 2 are unevaluated, and 4 are considered eligible to the NRHP. No eligible or unevaluated sites are incurring impact (ibid.). Additional site data is summarized in Table 4 of the specialist report. Based on the Class I, the Forest's site location model, and the fact that the majority of the project area has been inventoried; the potential to find an additional historic property is extremely low.

At present, additional inventory is needed to meet legal requirements. However, the Forest's PA with SHPO allows for phase compliance, in association with vegetation management at the project level. The agreement also requires that any projects implemented would result in a *no adverse effect* under the definition found in 36 CFR 800.

Little Horn River Watershed Grazing: Nine cattle and horse allotments are located in the watershed. Grazing on these allotments began just before or at the turn of the twentieth-century. The following data is based on work completed in 2009 and 2010 (O'Dell 2010 & 2011).

A review of previous inventories denotes that 56 survey projects have been performed within the Little Horn project area. These inventories have resulted in over 5,000 acres previously surveyed at Class III standards. Based on work and criteria in the Forest's PA, an additional 731 acres were selected for this analysis. These acres were included in a 2007 and 2008 cultural resource inventory contract to an archaeological consultant. Based on the Class I file search, 642 acres were found to require additional inventory to meet legal requirements under the Forest's PA. The selected survey blocks examined, in general, ranged from 2.5 to 10 acres in size.

The cultural resource reports document that a total of 32 sites lie within the Little Horn AMP area. Fourteen sites are prehistoric, 11 historic, and 7 sites have both a historic and prehistoric component. Nine of the sites are eligible to the NRHP, and the remaining 23 are not. Eight sites show signs of past grazing impacts, and the same 8 sites are presently being impacted. The impacts are considered adverse on 4 of the 8 sites. Additional site-specific information is summarized in Table 5 in the Cultural Resource Specialist Report.

As noted above, two reports were prepared by a contractor for the analysis of the watershed. Wyoming SHPO concurred on the Forest Service's determinations made in both reports, and SHPO's decisions are documented in letters dating February 25, 2010, and December 20, 2010. In accordance with the Forest's present PA, the historic properties being impacted have had a treatment plan created to lessen the occurring and/or potential ongoing effects. One of the sites requires archaeological mitigation, and the direction for the treatment has been formalized in a Memorandum of Agreement (MOA) with SHPO signed April 18, 2011.

Little Horn River Watershed Vegetation Management (prescribed fire, aspen treatment, and conifer encroachment): This proposed vegetation management project area totals 13,167 acres. Six previous inventories have been completed, and 761 acres or 5.8% of the area has been sufficiently inventoried.

The past inventory reports document the presence of 15 sites (Matthews 2011). Eight (8) are prehistoric, 6 are historic, and 1 site has both a historic and prehistoric component. The prehistoric sites are limited to surface lithic scatters. The historic sites include 2 associated with mining, a ranger station, a cow camp, and 2 cabins. The site with dual components includes a cow camp and prehistoric camps. Of the 15 sites, 7 are ineligible to the National Register of Historic Places (NRHP), 2 are unevaluated, and 6 are considered eligible to the NRHP. Additional site-specific information is summarized in Table 6 in the Cultural Resource Specialist Report.

Based on the present analysis (ibid.), the potential to find additional eligible prehistoric sites is high. In all probability, the majority of additional prehistoric resources will be found on areas having 15% or lower slope. The most likely site types would be open camp or teepee ring sites. Ineligible site types would include lithic scatters, and isolated finds. In areas with 15% or higher slope, the number of historic properties is low. However, a large proportion of the Little Horn proposed prescribed burn is on slopes greater than 15% (ca. 7,767 acres), and a large percentage of these acres are associated with steep cliffs, high points, and rock outcrops. If any sites are noted, the probability is high that the site would be eligible, as site types predicted would include, for example, rock art panels, vision quest beds or burials.

Class I information suggests that the potential to locate any new eligible historic property is extremely low. If new historic cultural resources were found, the most likely types would be ineligible remnant mining cabins, trash dumps, or isolated artifacts. At present, additional inventory is needed to meet legal requirements. However, the Forest's PA with SHPO allows for phase compliance, in association with vegetation management at the project level. The agreement also requires that any project implemented would have to attain, at a minimum, a *no adverse effect* determination by the Forest Service and SHPO, as defined in 36 CFR 800.

Rock Creek Watershed Grazing: The Rock Creek C&H allotment is the only allotment within this watershed. Approximately 200 acres of previous Class III inventory has been conducted in the project area. An additional 267 acres were selected under the terms of the Forest's PA, and consist of twenty-nine blocks that varied in size from 2.5 to 40 acres. The inventory was conducted during the summer and fall of 2006 under contract to a private consultant firm (Eggleston 2007). SHPO concurred by letter (April 12, 2007) on the Forest's determinations that implementation would result in a finding of *no adverse effect.*

The Class I file search noted two previously recorded ineligible sites, 48JO1603 and 48JO3065, located within the survey blocks. The survey resulted in the recording of three new sites, 48JO3776, 48JO3777, and 48JO3778 (Eggleston 2007). Pertinent summary data on the sites is found in Table 7 of the specialist report.

No general conclusion on the affected environment can be made due to the relatively small amount of Class III inventory within the project area. However, when the Class II inventory data is included (ca. 700 acres), the potential for finding historic properties in the project is considered low, as is the potential for past impacts to historic properties.

Tensleep Creek Watershed Grazing: The watershed consists of 12 allotments. Six are cattle and horse, and six are sheep and goat. As with the majority of other allotments noted, grazing in the watershed began just before, or at the turn of the twentieth century.

Initial Class I was conducted in March of 2008 and 1,866 acres were identified for inventory. Of this total, 843 acres appeared to have sufficient inventory completed, which left approximately 1,023 acres needing Class III inventory. The selected survey blocks examined, in general, ranged from 2.5 to 10 acres in size (Matthews 2010).

The Class I noted that 32 previously recorded sites were located within areas selected for analysis, as well as a Prehistoric District (Leigh Creek Archaeological District 48WA2167). Fieldwork began in the fall of 2008 and continued through the fall of 2009. The final inventory acres covered equaled 1,784 acres, as previously inventoried areas were checked to ensure the inventory met present SHPO standards. As a product of this cultural analysis, 40 sites are located in the analysis area. Thirty-five of the sites are prehistoric and 5 are historic. Fourteen of the 40 sites are eligible to the NRHP.

It was noted that 16 sites had received impacts in the past, but only 5 sites are incurring impacts presently. Four of these sites are historic properties, and the impacts are considered adverse under the NHPA. In accordance with the Forest's present PA, the historic properties being impacted required that treatment plans be created to lessen the occurring and/or potential ongoing effects. Wyoming SHPO concurred on the Forest's determination. SHPO's concurrence is documented in a correspondence to the Forest Service dated July 21, 2010.

The Forest and SHPO decided that the treatments to two sites, 48WA3 and 48WA392, were outside standard procedures of the Forest's PA, and a MOA was signed April 18, 2011 defining the specific protection measures. Additional site-specific information is summarized in Table 8 in the Cultural Resource Specialist Report.

Table 1, Grazing Cultural Resource Summary Data, Beaver Creek Watershed
(Based on Matthews 2007)

Smithsonian #	Site Type	Status	Impacts, Past/Present	Alt[1] 1 Recommendation/ Comments[2]	Alt 2 Recommendation /Comments	Alt 3 Recommendation /Comments
Previously Recorded Sites						
48BH114	Prehistoric Camp-	E	Y/Y	No Further Work	No Further Work-Buried Cultural Horizons-Evaluate every 5 years	No Further Work-Buried Cultural Horizons Evaluate every 5 years
48BH196	Prehistoric Camp	E	Y/Y	Remove Tank, Beneficial	Relocated Stock Tank off Site-Eliminate Impacts, Monitor for 3 Years	Relocated Stock Tank off Site-Eliminate Impacts, Monitor for 3 Years
48BH3588	Prehistoric Camp	E	Y/Y	Remove Tank, Beneficial	Relocated Stock Tank off Site-Eliminate Impacts, Monitor for 3 Years	Relocated Stock Tank off Site-Eliminate Impacts, Monitor for 3 Years
48BH3594	Prehistoric Camp	E	Y/N	No Further Work	No Further Work	No Further Work
Newly Recorded Sites						
48BH3730	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3731	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3732	Prehistoric Camp	NE	Y/N	No Further Work	No Further Work	No Further Work

[1] Alt = Alternative; E=Eligible to the National Register of Historic Places (NRHP), NE=Not Eligible to NRHP, UE= Unevaluated, Both=Site Having a Prehistoric and Historic Manifestation (Applies to all summary data tables).
[2] Under the No Action Alternative, all allotments/analysis areas, a MOA for phase compliance and mitigation would have to be completed before a decision document could be signed.

Table 1, Grazing Cultural Resource Summary Data, Beaver Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Impacts, Past/Present	Alt 1 Recommendation/ Comments	Alt 2 Recommendation /Comments	Alt 3 Recommendation /Comments
Newly Recorded Sites						
48BH3733	Prehistoric Camp	NE	Y/N	No Further Work	No Further Work	No Further Work
48BH3734	Prehistoric Camp	NE	Y/N	No Further Work	No Further Work	No Further Work
48BH3735	Prehistoric Camp	E	Y/N	No Further Work	No Further Work	No Further Work
48BH3736	Prehistoric Camp	E	Y/Y	No Further Work	Fenced During Pasture Utilization-Monitor # Years	Fenced During Pasture Utilization- Monitor # Years
48BH3827	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3828	Historic Cabin & Prehistoric Camp	NE	Y/N	No Further Work	No Further Work	No Further Work
48BH3829	Prehistoric Camp	NE	Y/N	No Further Work	No Further Work	No Further Work
48BH3830	Prehistoric Camp	NE	Y/N	No Further Work	No Further Work	No Further Work
48BH3831	Prehistoric Camp	NE	Y/N	No Further Work	No Further Work	No Further Work
48BH3832	Prehistoric Camp	NE	Y/Y	No Further Work	No Further Work	No Further Work
48BH3833	Historic Cabin	NE	N/N	No Further Work	No Further Work	No Further Work

Table 1, Grazing Cultural Resource Summary Data, Beaver Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Impacts, Past/Present	Alt 1 Recommendations /Comments	Al 2 Recommendations /Comments	Alt 3 Recommendations /Comments
Newly Recorded Sites						
48BH3834	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3835	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3836	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3837	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3838	Prehistoric Camp	NE	N/N/	No Further Work	No Further Work	No Further Work
48BH3839	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3840	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3841	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3842	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3843	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3844	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3845	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3846	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3847	Historic Cabin	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3848	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3849	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work

Table 1, Grazing Cultural Resource Summary Data, Beaver Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Impacts, Past/Present	Alt 1 Recommendations /Comments	Al 2 Recommendations /Comments	Alt 3 Recommendations /Comments
Newly Recorded Sites						
48BH3850	Prehistoric Camp	E	N/N	No Further Work	No Further Work	No Further Work
48BH3851	Prehistoric Camp	E	N/N	No Further Work	No Further Work	No Further Work
48BH3852	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3853	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3854	Historic Cabin	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3855	Vision Quest	E	N/N	No Further Work	No Further Work	No Further Work
48SH1569	Prehistoric Camp	E	N/N	No Further Work	No Further Work	No Further Work
48SH1570	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1571	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1645	Prehistoric Camp	E	N/N	No Further Work	No Further Work	No Further Work
48SH1646	Historic Cabin	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1647	Cairn	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1648	Cairn	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1649	Cairn	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1650	Cairn	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1651	Cairn	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1652	Cairn	NE	N/N	No Further Work	No Further Work	No Further Work
Totals: Previously Recorded=4, New=47; Total = 51	**Both=1, Historic=4, Prehistoric=46**	**E=11, NE=40**	**Past-N=37, Y=14; Pres.-N=46, Y=5**	**No Further Work=49, Beneficial Stock Tank Removal=2[3]**	**Remove Stock Tank & Monitor=2; Fence & Monitor=1; No Further Work=48**	**Remove Stock Tank & Monitor=2; Fence& Monitor=1; No Further Work=48**

[3] The total number is unknown as additional work would be needed, and this statement applies to the other analysis areas in conjunction with Alternative 1.

Table 2, Prescribed Fire Cultural Resource Summary Data, Beaver Creek Watershed (From Matthews 2011),

Smithsonian #	Site Type	Status	Alternative 3 Comments/Management Needs
Beaver Creek			
48BH271	**Historic/Prehistoric**	**E**	**Long View Ranger Station-Protect**
48BH344	**Prehistoric**	**E**	**No Further Work (NFW)**
48BH355	**Prehistoric**	**UE**	Additional Work Needed In Accordance with PA Including Evaluation (AWIA/PA)
48BH1831	**Prehistoric**	**NE**	**NFW**
48BH1832	**Prehistoric**	**NE**	**NFW**
48BH2475	**Prehistoric**	**UE**	**AWIA**
48BH2476	**Prehistoric**	**UE**	**AWIA**
48BH2477	**Prehistoric**	**NE**	**NFW**
48BH2478	**Prehistoric**	**NE**	**NFW**
48BH2475	**Prehistoric**	**UE**	**AWIA**
48BH3542	**Historic Cabin**	**NE**	**Noble Cabin-Protect**
48BH3594	**Prehistoric**	**E**	**NFW**
48BH3595	**Prehistoric**	**E**	**NFW**
48BH3601	**Prehistoric**	**E**	**NFW**
48BH3735	**Prehistoric**	**E**	**NFW**
48BH3827	**Prehistoric**	**NE**	**NFW**
48BH3828	**Prehistoric/Historic**	**NE**	**Cabin Protect**
48BH3829	**Prehistoric**	**NE**	**NFW**
48BH3830	**Prehistoric**	**NE**	**NFW**
48BH3831	**Prehistoric**	**NE**	**NFW**
48BH3832	**Prehistoric**	**NE**	**NFW**
48BH3833	**Historic Cabin**	**NE**	**Cabin Protect**
48BH3834	**Prehistoric**	**NE**	**NFW**
48BH3836	**Prehistoric**	**NE**	**NFW**
48BH3838	**Prehistoric**	**NE**	**NFW**
48BH3849	**Prehistoric**	**NE**	**NFW**
48BH3852	**Prehistoric**	**NE**	**NFW**
48BH3853	**Prehistoric**	**NE**	**NFW**

Table 2, Prescribed Fire Cultural Resource Summary Data, Beaver Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Alternative 3 Comments/Management Needs
Beaver Creek			
48BH3854	**Prehistoric**	**NE**	**NFW**
48SH638	**Historic Mine**	**NE**	**NFW**
48SH651	**Historic Mine**	**NE**	**NFW**
48SH652	**Prehistoric**	**UE**	**AWIA**
48SH655	**Historic Dump**	**NE**	**NFW**
48SH656	**Prehistoric**	**UE**	**AWIA**
Sub-Totals: 34	**27 Prehistoric 5 Historic 2 Both**	**6 Eligible 6 UnEvalu 21 Ineligible**	**24 No Further Work, 4 Protect 6 AWIA/PA**

Table 3, Grazing Cultural Resource Summary Data, Goose Creek Watershed
(Based on Sutton 2006; Laurent 2008b)

Smithsonian #	Site Type	Status	Impacts, Past/Present	Alt 1 Recommendation/ Comments	Alt 2 Recommendation /Comments	Alt 3 Recommendation /Comments
New Sites						
48SH1610	Prehistoric Camp and Lithic Reduction	NE	Y/Y	No Further Work/Status Influence By Grazing	Same	Same
48SH1611	Prehistoric Camp and Lithic Reduction	NE	Y/Y	No Further Work/Status Influence By Grazing	Same	Same
48SH1612	Prehistoric Camp and Lithic Reduction	NE	Y/Y	No Further Work/Status Influence By Grazing	Same	Same
48SH1642	Prehistoric Camp	NE	N/N	No Further Work	Same	Same
48JO3979	Prehistoric Quarry	NE	N/N	No Further Work	Same	Same
Sub Total: 5	P = 5	NE = 5	Past-Y=3, N=2; Pres-N=2; -Y=3	No Further Work = 5	No Further Work = 5	No Further Work = 5

Table 3, Grazing Cultural Resource Summary Data, Goose Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Impacts: Past/ Present	Alt 1 Recommendation /Comments	Alt 2 Recommendation /Comments	Alt 3 Recommendation /Comments
Previously Recorded Sites						
48JO3787	Prehistoric Lithic Scatter	NE	Y/Y	No Further Work	No Further Work	No Further Work
48JO3788	Prehistoric Lithic Scatter	NE	N/N	No Further Work	No Further Work	No Further Work
48JO3789	Historic Cabin & Dump	NE	N/N	No Further Work	No Further Work	No Further Work
48SH6	Prehistoric Camp	E	Y/Y	No Further Work	Monitor (minimum 3 yrs.), Implement Protection (i.e. Fencing or Barriers) if Needed	Monitor (minimum 3 yrs.), Implement Protection (i.e. Fencing or Barriers) if Needed
48SH560	Historic Cow Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48SH580	Prehistoric Lithic Scatter	NE	Y/Y	No Further Work	No Further Work	No Further Work
48SH582	Prehistoric Lithic Scatter	NE	Y/Y	No Further Work	No Further Work	No Further Work
48SH583	Prehistoric Lithic Scatter	NE	Y/Y	No Further Work	No Further Work	No Further Work
48SH793	Prehistoric Camp	NE	Y/Y	No Further Work	No Further Work/ Influenced By Grazing	No Further Work/Status Influenced By Grazing
48SH799	Historic Trail	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1159	Prehistoric/Historic Travel Corridor	E	N/N	No Further Work	No Further Work	No Further Work

Table 3, Grazing Cultural Resource Summary Data, Goose Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Impacts: Past/ Present	Alt 1 Recommendation /Comments	Alt 2 Recommendation /Comments	Alt 3 Recommendation /Comments
Previously Recorded Sites						
48SH1543	Prehistoric Campsite/ Historic Cairn	E	Y/Y	No Further Work	Fence and Monitor (Laurent 2008)	Fence and Monitor (Laurent 2008)
48SH1547	Little Goose Cow Camp	E	N/N	Mitigate-MOA w/SHPO	No Further Work	No Further Work
48SH1548	Sage Cow Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1549	Prehistoric Rock Shelter	E	N/N	No Further Work	No Further Work	No Further Work
48SH1550	Prehistoric Lithic Scatter	NE	Y/Y	No Further Work	No Further Work	No Further Work
48SH1551	Historic Cabin & Saloon	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1552	Historic Trail	NE	Y/Y	No Further Work	No Further Work	No Further Work
48SH1553	Historic Settlement	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1554	Historic Mine	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1555	Historic Cabin	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1556	Prehistoric Rock Shelter	E	N/N	No Further Work	No Further Work	No Further Work
48SH1557	Prehistoric Campsite	E	Y/N	No Further Work	No Further Work	No Further Work
48SH1558	Prehistoric Lithic Scatter	NE	Y/Y	No Further Work	No Further Work	No Further Work
48SH1559	Prehistoric Campsite & Historic Range Marker	NE	Y/Y	No Further Work	No Further Work	No Further Work

Table 3, Grazing Cultural Resource Summary Data, Goose Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Impacts: Past/ Present	Alt 1 Recommendation /Comments	Alt 2 Recommendation /Comments	Alt 3 Recommendation /Comments
Previously Recorded Sites						
48SH1560	Historic Range Marker	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1561	Historic Mining Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1562	Historic Mine	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1563	Historic Mine	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1564	Prehistoric Campsite	E	Y/Y	No Further Work	No Further Work	No Further Work
48SH1565	Historic Cabin & Prehistoric Lithic Scatter	NE	Y/Y	No Further Work	No Further Work	No Further Work
48SH1566	Prehistoric Lithic Scatter	NE	Y/N	No Further Work	No Further Work	No Further Work
48SH1567	Prehistoric Lithic Scatter	NE	Y/Y	No Further Work	No Further Work	No Further Work
48SH1581	Historic Mining District	NE	N/N	No Further Work	No Further Work	No Further Work
48SH1586	Prehistoric Lithic Scatter	NE	Y/Y	No Further Work	No Further Work	No Further Work
Totals: New Sites=5 Previously Recorded=35; Total=40	**Prehistoric=21, Historic=15, Both=4**	**E=8, NE=32**	**Past-N=20, Y=20; Present-N=22, Y=18**	**No Further Work=39; Mitigate-MOA w/ SHPO=1**	**No Further Work=38; Fence and Monitor=1; Monitor, Implement Protection if Needed=1**	**No Further Work=38, Fence and Monitor=1; Monitor, Implement Protection if Needed=1**

Table 4, Vegetation Management Cultural Resource Summary Data, Goose Creek Watershed (Laurent 2011)

Smithsonian #	Site Type	Status	Alternative 3 Comments/Management Needs
Rapid Creek Allotment			
48SH576	Prehistoric	UE	Additional Work Needed In Accordance with PA Including Evaluation (AWIA/PA)
48SH586	Prehistoric	NE	No Further Work (NFW)
48SH587	Prehistoric	NE	NFW
48SH779	Prehistoric	UE	AWIA/PA
48SH788	Road	E	Within Analysis Area, But Outside Specific Treatment Area (OSTA)
48SH1548	Sage Cow Camp	NE	OSTA
48SH1568	Beaver Ditch	E	OSTA
Sub-Totals: 7	**4 prehistoric, 3 historic**	**UE=2, NE=3, E=2**	**AWIA/PA=3, NFW=2, OSTA=3**
Big Goose Allotment			
48SH48	Prehistoric	NE	NFW
48SH606	Prehistoric	NE	NFW
48SH607	Prehistoric	E	AWIA/PA
48SH608	Prehistoric	NE	NFW
48SH821	Hist. Trail/Road	NE	NFW
48SH1545	Irrigation Ditch	E	OSTA
48SH1568 (do not count in totals, note above in Rapid Creek Allotment)	Irrigation Ditch	E	OSTA
Sub-Totals: 7	**P =4, H=3 (count 2)**	**E=3(count 2), NE=4**	**NFW=4, AWIA/PA =1, OSTA=2 (count 1)**

Table 4, Vegetation Management Cultural Resource Summary Data, Goose Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Alternative 3 Comments/Management Needs
Tourist Allotment			
48JO3787	Prehistoric	NE	NFW
48JO3788	Prehistoric	NE	NFW
48JO3789	Historic Dump	NE	NFW
Subtotal: 3	P=2, H=1	NE=3	NFW=3
Rapid Creek Sub-Totals: 7	Prehistoric=4; Historic=3	UE=2; NE=3; E=2	AWIA/PA=3, NFW=2, OSTA=3
Big Goose Sub-Totals: 7 (count 6 only; 48SH1568 noted in two allotments)	P =4, H=3 count 2 only)	E=3 (count 2 only), NE=4	NFW=4, AWIA/PA =1, OSTA=2 count 1 only)
Totals: 16	**P=10, H=6**	**NE=10, UE=2, E=4**	**NFW=9, AWIA/PA=3, OSTA=4**
Comment: Site 48SH1568, historic ditch, is noted in two Allotments and is only counted once in final totals.			

Table 5, Grazing Cultural Resource Summary Data, Little Horn Watershed
(O'Dell 2010 & 2011)

Smithsonian #	Site Type	Status	Impacts: Past/ Present	Alt 1 Recommendations /Comments	Alt 2 Recommendations /Comments	Alt 3 Recommendations /Comments
Previously Recorded Sites						
BH1398	Prehistoric & Historic Trail	E	N/N	No Further work	No Further work	No Further work
SH62	Historic Mine	E	N/N	No Further work	No Further work	No Further work
SH660	Historic Mine	NE	N/N	No Further work	No Further work	No Further work
SH661	Prehistoric & Historic	NE	N/N	No Further work	No Further work	No Further work
SH662	Prehistoric & Historic	NE	N/N	No Further work	No Further work	No Further work
SH743	Historic	NE	N/N	No Further work	No Further work	No Further work
SH771	Historic	NE	Y/Y	No Further work	No Further work	No Further work
SH805	Prehistoric & Historic	NE	N/N	No Further work	No Further work	No Further work
SH806	Prehistoric	NE	Y/Y	No Further work	No Further work	No Further work
SH807	Prehistoric	NE	Y/Y	No Further work	No Further work	No Further work
SH899	Prehistoric & Historic	NE	N/N	No Further work	No Further work	No Further work
SH1279	Prehistoric	E	N/N	Impacted by Recreation NE Grazing	Recreation Impacts[4]-NE Grazing	Recreation Impacts-NE Grazing
Newly Recorded Sites						
BH4014	Historic Foundation	NE	N/N	No Further work	No Further work	No Further work
SH1734	Historic Road	NE	N/N	No Further work	No Further work	No Further work
SH1735	Cairn	NE	N/N	No Further work	No Further work	No Further work
SH1736	Historic Cabin	NE	N/N	No Further work	No Further work	No Further work

[4] Affect from outfitting guide camp, outside grazing analysis, and will be deal with through the recreation special use permit.

Table 5, Grazing Cultural Resource Summary Data, Little Horn Watershed (Continued)

Smithsonian #	Site Type	Status	Impacts: Past/ Present	Alt 1 Recommendations /Comments	Alt 2 Recommendations /Comments	Alt 3 Recommendations /Comments
Newly Recorded Sites						
SH1737	Little Horn Cow Camp	E	N/N	Remove camp-Consultation Required	No Further work	No Further work
SH1738	Prehistoric	NE	Y/Y	No Further work	No Further work	No Further work
SH1739	Prehistoric	E	Y/Y	Remove stock Tank Beneficial	Relocate Tank off site /NAE	Relocate Tank off site /NAE
SH1740	Prehistoric & Historic Boyd Cow Camp	E	Y/Y	Remove camp-Consultation Required AE	Data Recovery/MOA NAE	Data Recovery/MOA NAE
SH1741	Prehistoric	E	Y/Y	Remove stock Tank Beneficial	Relocate Tank off site	Relocate Tank off site
SH1742	Prehistoric	NE	N/N	No Further work	No Further work	No Further work
SH1743	Cairn	NE	N/N	No Further work	No Further work	No Further work
SH1744	Prehistoric	E	Y/Y	Remove stock Tank Beneficial	Relocate Tank off site	Relocate Tank off site
SH1745	Cairn	NE	N/N	No Further work	No Further work	No Further work
SH1746	Historic Dump	NE	N/N	No Further work	No Further work	No Further work
SH1747	Historic Cow Camp	NE	N/N	No Further work	No Further work	No Further work
SH1757	Cairn	NE	N/N	No Further work	No Further work	No Further work
SH1758	Cairn	NE	N/N	No Further work	No Further work	No Further work
SH1759	Historic w/Single Prehistoric Flake	E	N/N	Remove camp-Consultation Required	No Further work	No Further work
SH1760	Cairn	NE	N/N	No Further work	No Further work	No Further work
SH1761	Historic Cub Creek Cow Camp	NE	N/N	No Further work	No Further work	No Further work
Totals: Previously=12; New Sites=20 Total=32	**Both=7; Historic=11 Prehistoric=14**	**9 Eligible 23 Non Eligible**	**Past =24 N & 8 Y; Present = 24 N & 8 Y**	**Mitigate-MOA w/ SHPO=1; Range Improvements Removed, Beneficial=5; No Further Work=26**	**Relocate Tank Off Site=3; Data Recovery/MOA=1 Outfitter Guide Impact=1 No Further Work=27**	**Relocate Tank Off Site=3; Data Recovery/MOA=1 Outfitter Guide Impact=1 No Further Work=27**

Table 6, Prescribed Fire Cultural Resource Summary Data, Little Horn Watershed (Matthews 2011)

Smithsonian #	Site Type	Status	Alternative 3 Comments/Management Needs
		Little Horn	
48BH270	Historic Mine	UE	AWIA/PA
48BH389	Prehistoric	UE	AWIA/PA
48BH391	Prehistoric	NE	No Further Work
48BH392	Prehistoric	NE	No Further Work
48BH393	Prehistoric	NE	No Further Work
48BH1767	Historic Porcupine Ranger Station	E	Protect
48BH3467	Historic Cabin	NE	Protect
48BH3468	Historic Cabin	NE	Protect
48SH62	Historic Bald City	E	Monitor
48SH1737	Historic Little Horn Cow Camp	E	Protect
48SH1738	Prehistoric	NE	No Further Work
48SH1739	Prehistoric	E	No Further Work
48SH1740	Multi-Boyd Camp	E	Protect
48SH1744	Prehistoric	E	No Further Work
48SH1745	Prehistoric	NE	No Further Work
Sub-Totals: 15	8 Prehistoric 6 Historic 1 Both	6 Eligible 2 UnEvalu 7 Non	7 No Further Work, 5 Protect 1 Monitor 2 AWIA/PA

Table 7, Grazing Cultural Resource Summary Data, Rock Creek Watershed
(Eggleston 2007)

Smithsonian #	Site Type /Components	Status	Impact Past/Present	Alt 1 Recommendations /Comments	Alt 2 Recommendations /Comments	Alt 3 Recommendations /Comments
			New Sites			
48JO3776	Historic Dugout	NE	N/N	No Further Work	No Further Work	No Further Work
48JO3777	Historic Mine	NE	N/N	No Further Work	No Further Work	No Further Work
48JO3778	French Creek Cow Camp	E	N/N	MOA Needed to define mitigation	No Further Work	No Further Work
			N/N	*Previously Recorded Sites*		
48JO1603	Road	NE	N/N	No Further Work	No Further Work	No Further Work
48JO3065	Rock Creek Cow Camp	NE	N/N	No Further Work	No Further Work	No Further Work
Totals: 5	**Historic=5**	**NE= 4 E =1**	**N=5/N=5**	**No Further Work =4; Mitigate-MOA w/ SHPO=1**	**No Further Work = 5**	**No Further Work = 5**

Table 8, Grazing Cultural Resource Summary Data, Tensleep Creek Watershed (Based on Matthews 2010)

Smithsonian #	Site Type	Status	Impact Past/Present	Alt 1 Recommendations /Comments	Alt 2 Recommendations /Comments	Alt 3 Recommendations /Comments
Previously Recorded Sites						
48BH1077	Prehistoric Camp	NE	Y/N	No Further Work	No Further Work	No Further Work
48BH3247	Prehistoric Camp	E	Y/N	No Further Work	No Further Work	No Further Work
48BH3364	Prehistoric Camp	E	Y/N	No Further Work Deep	No Further Work Deep Buried Cultural component	No Further Work Deep Buried Cultural component
48WA3	Prehistoric Camp	E	Y/Y	Remove Range Improvements/ Monitoring Needed	Fence, Monitor/ MOA w/SHPO	Fence, Monitor/MOA w/SHPO
48WA318	Prehistoric camp	E	Y/Y	No Further Work	No Further Work Deep Buried Cultural component	No Further Work Deep Buried Cultural component
48WA388	Prehistoric camp	E	Y/Y	Remove Range Improvements/ Beneficial	Fence Site, Monitor	Fence Site, Monitor
48WA392	Prehistoric Camp	E	Y/Y	Remove Range Improvements/ Beneficial	Fence, Relocate Tank, Monitor/MOA w/SHPO	Fence, Relocate Tank, Monitor/MOA w/SHPO
48BH3993	Prehistoric Camp	E	Y/N	No Further Work	No Further Work Deep Buried Cultural component	No Further Work Deep Buried Cultural component
48WA3994	Prehistoric Camp	E	Y/N	No Further Work	No Further Work	No Further Work
48WA3995	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work

Table 8, Grazing Cultural Resource Summary Data, Tensleep Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Impact Past/Present	Alt 1 Recommendations /Comments	Alt 2 Recommendations /Comments	Alt 3 Recommendations /Comments
Newly Recorded Sites						
48BH3996	Historic Corral	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3997	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH3998	Historic Cabin	NE	N/N NE	No Further Work	No Further Work	No Further Work
48BH3999	Prehistoric Camp	E	Y/N	No Further Work	No Further Work Deep Buried Cultural component	No Further Work Deep Buried Cultural component
48BH4000	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH34001	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH4002	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH4003	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH4004	Prehistoric Camp	E	Y/N	No Further Work -	No Further Work -Deep Buried Cultural component	No Further Work -Deep Buried Cultural component
48BH4005	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH4006	Historic Lodge	NE	N/N	No Further Work	No Further Work	No Further Work
48BH4007	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work

Table 8, Grazing Cultural Resource Summary Data, Tensleep Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Impact Past/Present	Alt 1 Recommendations /Comments	Alt 2 Recommendations /Comments	Alt 3 Recommendations /Comments
Newly Recorded Sites						
48BH4008	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH4009	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH4010	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH4011	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48BH4012	Prehistoric Camp	E	Y/N	No Further Work	No Further Work Deep Buried Cultural component	No Further Work Deep Buried Cultural component
48JO4181	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48JO4182	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48JO4183	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48JO4184	Historic Mining Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48WA2194	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48WA2195	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work

Table 8, Grazing Cultural Resource Summary Data, Tensleep Creek Watershed (Continued)

Smithsonian #	Site Type	Status	Impact Past/Present	Alt 1 Recommendations /Comments	Alt 2 Recommendations /Comments	Alt 3 Recommendations /Comments
48WA2196	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48WA2197	Prehistoric Camp	E	Y/Y	Remove Stock Tank/ Beneficial	Relocate Tank off Site	Relocate Tank off Site
48WA2198	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48WA2199	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48WA2200	Prehistoric Camp	NE	N/N	No Further Work	No Further Work	No Further Work
48WA2201	Prehistoric Camp	E	Y/N	No Further Work	No Further Work Deep Buried Cultural component	No Further Work Deep Buried Cultural component
48WA2213	Historic Canyon Cr. Cow Camp	E	N/N	Remove Cow Camp/ MOA w/SHPO	No Further Work	No Further Work
Totals: Previously Recorded=10; New Sites =30; Total=40	**Historic=5; Prehistoric = 35**	**Eligible =14 Non Eligible =26**	**Past-N=24, Y=16; Present-N=35, Y=5**	**Beneficial=3; Non-Beneficial (cow camp removal—MOA w/SHPO)=1 Monitor-Range Improvement Removal=1; No Further Work=35**	**MOA w/SHPO=2; Fence Site, Monitor=1; Relocate Tank=1 No Further Work=36**	**MOA w/SHPO=2; Fence Site, Monitor=1; Relocate Tank=1 No Further Work=36**

Table 9, Cultural Resource Summary Data Totals, All Allotments and Vegetation Management Projects

Name	Site Types	Status	Impacts	Alt 1 Recommendations /Comments	Alt 2 Recommendations /Comments	Alt 3 Recommendations /Comments
Beaver AMPs Totals: Previously Recorded=4, New=47; Total = 51	Prehistoric=46 Historic=4 Both=1	E=11, NE=40	Past-N=37, Y=14; Pres.- N=46, Y=5	NFW=49 Beneficial Stock Tank Removal=2[5]	NFW=48 Remove Stock Tank & Monitor=2; Fence & Monitor=1;	NFW=48, Remove Stock Tank & Monitor=2; Fence & Monitor=1;
Beaver VGM-Totals: Previously Recorded =34	Prehistoric=27 Historic=5 Both=2	E=6, NE =22 UE=6,	N/A=34	N/A	N/A	NFW=24 Avoid=4 AWIA/PA=6
Goose AMPs Totals: New Sites=5 Previously Recorded=35; Total=40	Prehistoric=21, Historic=15, Both=4	E=8, NE=32	Past-N=20, Y=20; Present-N=22, Y=18	NFW=39 Mitigate-MOA w/ SHPO=1	NFW=38; Fence and Monitor=1; Monitor, Implement Protection if Needed=1	NFW Work=38, Fence and Monitor=1; Monitor & Implement Protection if Needed=1
Goose VGM Totals: Previously Recorded=16	Prehistoric=10, Historic=6	E=4 NE=10, UE=2	N/A=16	N/A	N/A	NFW=9, AWIA/PA=3, OSTA=4
Little Horn AMPs Totals: Previously=12; New Sites=20 Total=32	Prehistoric=14 Historic=11 Both=7	E=9 NE=23	Past-N =24 Y=8; Present-N=24, Y=8	NFW=26 Mitigate-MOA w/ SHPO=1; Range Improvements Removed, Beneficial=5;	NFW=27 Relocate Tank Off Site=3; Data Recovery/MOA=1 Outfitter Guide Impact=1	NFW=27 Relocate Tank=3; Data Recovery /MOA=1 Outfitter Guide Impact=1

[5] The total number is unknown as additional work would be needed, and this statement applies to the other analysis areas in conjunction with Alternative 1.

Table 9, Cultural Resource Summary Data, All Allotments and Vegetation Management Projects (Continued)

NAME	SITE TYPES	STATUS	IMPACTS	Alt 1 Recommendations /Comments	Alt 2 Recommendations /Comments	Alt 3 Recommendations /Comments
Little Horn VGM Totals: Previously Recorded Sites =15	8 Prehistoric 6 Historic 1 Both	E =6 NE=7 UE=2	N/A=15	N/A	N/A	NFW=7, Avoid=5 Monitor=1 AWIA/PA=2
Rock Creek: Totals: New Sites=5	Historic=5	E =1 NE= 4	N=5/N=5	NFW=4 Mitigate-MOA w/ SHPO=1	NFW= 5	NFW= 5
Tensleep AMP Totals: Previously Recorded=10; New Sites =30; Total=40	Historic=5; Prehistoric = 35	E=14 NE =26	Past-N=24, Y=16; Present-N=35, Y=5	NFW=35 Beneficial=3; Non-Beneficial (cow camp removal—MOA w/SHPO)=1 Monitor=1	NFW=36 MOA w/SHPO=2; Fence Site, Monitor=1; Relocate Tank=1	NFW=36 MOA w/SHPO=2; Fence Site, Monitor=1; Relocate Tank=1
Overall Totals: Previously Recorded=126, New Sites=107 Totaling 233	Prehistoric=161 Historic=57 Both=15 Totaling 233	E=59 NE=164 UE=10, Totaling 233	Past—N=110, Y=58; Present--N=132, Y=36	NFW=153 Beneficial=10 Non-Beneficial(adverse affect)=4 Monitor=1	NFW=154 Standard Treatments=10 MOA Mitigation=3	AMPs--NFW=154 Standard Treatments=10 MOA Mitigation=3 VGM[6]—NFW=40 PA Measures=25 Other—1 site was noted incurring impact by outfitter—outside scope of this NEPA

[6] Numbers only represent existing knowledge based on Class I, and dose not represent final numbers as additional inventory is required, pursuant to the Forest' PA.

Existing Condition

See Above

Desired Condition

In general, the desired condition (DC) for cultural resources is two fold. First is DC related to Forest wide program level management driven by Section 110 of the NHPA, and the second is management of specific historic properties found during support work to other programs, as determine by Section 106 of the NHPA. Examples of Forest wide level are 1) to survey lands with the highest potential for historic properties, and 2) recommend sites to the NRHP (Plan 2005: 1-52). Management for projects under Section 106 is broadly defined as protecting the qualities that make the site eligible to the NRHP (36 CFR 800). Therefore, for all practical purposes, DC for cultural resources relates to management practices to locate, evaluate, protect, and manage historic properties for future generations.

The present project falls under the direction of Section 106. Based on the present inventories completed for this analysis (i.e. Laurent 2008b), this discussion only needs to focus on prehistoric properties. The Forest Plan makes broad statements similar to management practices noted above. The NHPA regulation, 36 CFR 800, directs federal agencies to negotiate with SHPO and/or the Council, and/or consulting parties to establish DC. Federal Agencies can establish standard protections measures through a PA, and/or measures that have been previously concurred on by SHPO. The following are characteristics of a DC for a prehistoric site in association with domestic livestock grazing.

1. Grazing is conducted in such a manner that:
    a. The pasture/allotment is meeting grazing standards,
    b. Livestock are grazed on/across a site in a way (numbers and length of stay) that they are not milling, causing localized overgrazing, trampling, trailing, etc., which would lead to soil erosion by wind or rain, lead to the exposure and/or mixing and/or destruction of cultural resource artifacts and features, and
2. No support facilities, such as stock tanks, corrals, and loading docks are located within, or in close proximity to the site

In general, the DC needs to be reached as soon as possible, as cultural resources are nonrenewable. Therefore, in relationship to grazing, the key step is to manage grazing (e.g., intensity and duration) to a point that, for instance, erosion is stopped and soil building is occurring.

Desired Condition in association with vegetation management is conducted under the Forest's PA. The document's emphasis is site avoidance that may be accomplished by project redesign and/or implementation of protection measurements such as black-lining around a site.

Environmental Consequences

Methodology

The focus of this analysis is to outline the cultural resource environment associated with ten-year-term grazing permits, and vegetation management.

Areas inventoried for grazing were selected on criteria developed in a 1995 Memorandum Of Understanding (MOU) among the USDA, Bighorn National Forest, the Advisory Council On Historic Preservation (Council), and the Wyoming State Historic Preservation Office (SHPO) regarding the renewal of ten-year-term grazing permits on the Bighorn National Forest. The MOA was updated and incorporated into a Programmatic Agreement (PA) among the USDA, Bighorn National Forest, the Advisory Council on Historic Preservation (the council), and the Wyoming State Historic Preservation Office (SHPO) that was signed in January 2009. The PA outlines the procedures by which the Bighorn National Forest follows to fulfill its requirements for Section 106 of the National Historic Preservation Act (NHPA). An additional agreement will be sign in 2010 to implement any mitigation needs, and to allow for potential phasing for grazing inventory.

The main emphasis of the PA for grazing is to select areas of high potential of cultural resources that overlap with high potential for impacts related to grazing activities. Once the overlap areas are identified, Class III inventory would take place. The data is document in a report that is sent to SHPO for review, and includes information on site eligibility and determination of impacts.

Vegetation management including prescribe fire, and hazardous fuel reduction is also covered in the Forest's PA. Areas selected for Class III or Class II inventory is based on types of methods used, and vegetation type. On large area NEPA, where the exact method to be employed is unknown, inventory can be completed after NEPA. However, projects cannot be implemented until the cultural resource inventory(s) has been completed, and concurred on by SHPO. The protocol in the PA requires that any vegetation treatment shall reach a *no adverse affect* or *no historic properties affected* determination. If this cannot occur, the NEPA decision for the action has to be withdrawn. The specific PA direction for grazing and vegetation management is located in the specialist report as Attachment A.

Based on Class I file searches, cultural resource inventories (e.g. Peterson and Laurent 2001; Sutton 2006), and analysis for the 2005 Forest Plan (Forest Plan 2005), domestic livestock grazing actions have impacted numerous sites. The domestic grazing program is considered to have the highest potential to impact cultural resources on the Forest. Impacts can occur from trailing, powdering of soil from hoof action, an animal bogging down mixing buried cultural materials, and overgrazing resulting in various types of erosion. Other programs, such as vegetation and fire management, with the exception of one case, have not been documented as impacting cultural resources in the last 20 years. The only other program on the Forest that has been documented to impact cultural resources is dispersed recreation, and only a few of those impacts have been documented as potential adverse.

Monitoring has revealed that when an allotment and/or pasture is not meeting range standards and guidelines and/or desired conditions, there is a high probability that impacts to historic properties are occurring (e.g. Laurent 2008a). Although the opposite could occur, as impacts to cultural resources can be limited to a relatively small area, 50 by 50 feet, that would not be considered a problem within a 5,000 acre allotment from a range management perspective. Yet, from a cultural resource viewpoint, such small areas at the allotment level can be considered extremely important, and detrimental to an historic property, as many sites are only a few feet in size (Peterson and Laurent 2001).

Therefore, there is no direct relationship of cultural resource desired condition integrated into range standards and guidelines, and impacts could occur regardless it the allotment is meeting standards and guidelines. Although long-term (10 years) range trend data, and yearly monitoring data can suggest the increase or decrease of the likelihood that grazing is having an impact to historic properties. This is to say that, if an allotment's long-term trend is moving upward and/or near and/or at desired range conditions, the potential for impacts to cultural resources is proportionally reduced.

Determining what an impact is, is define, for example, in the National Register Bulletin 15 (Park Service Publication 1995) and in 36 CFR 800. Additional guidance comes from Wyoming SHPO through Section 106 comment/review letters and/or as stipulations and definitions found in MOUs and PAs. Under the NHPA and pursuant to 36 CFR 800, once a site has been determined to be incurring an *adverse effect*, the Federal Agency has to consult with SHPO, interested parties and/or the council to considered ways to mitigate or lessen the adverse effect as soon as possible. This is particularly important to prehistoric sites as the characteristics (e.g. artifact spatial relationships) that make these sites historic properties can be easily destroyed by grazing actions.

An adverse effect determination within the scope of the NHPA is not automatically a significant impact under NEPA. This is true, for instance, if the site under an adverse effect has similar data located in a portion of the site that is not being impacted. However, once a site has been impacted to the extent, it is no longer eligible to the National Register of Historic Places (NRHP); the probability could be high that a significant impact under NEPA has occurred. The main reasons being is that 1) cultural resources are nonrenewable, and you have no future options. Under NEPA; such a scenario is defined as an *irreversible* impact. 2) The Bighorn National Forest has carried out very little data recovery and therefore lack pertinent information to determine data gaps and/or if sufficient site types are present.

Incomplete and Unavailable Information

- Inventory data on Alternative 1 is insufficient to define the full range of historic properties that could be impacted.
- Inventory data is incomplete on portions of the proposed vegetation management actions found in Alternative 3. This precludes the ability to determine the number of impacts and/or proposed mitigation. However, the Forest's PA allows for phase compliance, and projects cannot be implemented until the cultural resource inventory(s) has been completed, and concurred on by SHPO. The protocol requires that any vegetation treatment shall reach a *no adverse affect* or *no historic properties affected* determination. If this cannot occur, the NEPA decision for the action has to be withdrawn. The specific PA direction for grazing and vegetation management is located in the specialist report as Attachment A.

Spatial and Temporal Context for Effects Analysis

In order to discuss effects on cultural resources, pursuant to 36 CFR 800, the site has to be evaluated as eligibility to the NRHP. Determination of eligibility is based on 36 CFR 60 and SHPO direction. Additionally, the site type may need to be place into an historic context. The context discusses the type of site, activities that occurred at the site, its age and association to other similar cultural resources, the number of similar sites within a classified geographic area. As well as the site's physical and environmental integrity; potential to contain new information, or contribute to better understanding/refining previous data on a specific cultural complex within the specific geographical unit. The Bighorn Mountains are considered a geographic unit[7], and therefore considered an appropriate spatial area for comparative analysis.

It should be noted that even though the Bighorn Mountains are considered a geographical area large enough for site comparison, data gaps are present. Additionally, in some cases, a number of cultural

[7] Defined by the Wyoming SHPO, and noted in SHPO's designated site recording form.

resources are reviewed at the state and/or national level to determine their historic context and/or historic importance and/or rarity (USDI 1991). In general, historic themes such as the railroad, grazing, and Paleo-Indian are viewed at the state level due to rarity and/or importance to the history of Wyoming.

Knowing the specific data on a given site type, for instance Late Archaic Prehistoric campsites (ca. 1,500 to 3,000 years before present) is critical. The NHPA does not require all sites that meet the criteria in 36 CFR 60 to be considered eligible. The NHPA allows that once a sufficient number of a specific site type within a specific geographic unit have been evaluated as eligible, and adequate data has been collected, protecting additional similar sites with similar data may be redundant. Therefore, once redundancy has been reached, any new site in the specific category could be recommended as non-eligible to the NRHP. On the Forest, because of the lack of data recovery, redundancy determinations are limited.

Short-term direct adverse effects for Section 106 projects are defined as impacts that occur during implementation of the project. The actions result in diminishing a characteristic that makes the site eligible, as defined in 36 CFR 60 and SHPO direction. The same period is used for short-term beneficial impacts.

Long-term direct adverse impacts, for all practical purposes, are not allowed for 106 projects under the NHPA. Because the variation in the types of cultural resources, long-term direct beneficial effects can differ. Generally, effects would begin at the completion of the project, and would last a decade or more into the future.

Indirect short and long term effects are difficult to define for cultural resources until the project is implemented, as impacts predicted would generally be defined as direct. An example of an indirect impact would be the placement of a new culvert which would increase water flow across a site that would cause erosion and would not be noted until three or four years after placement. Another would be increased rodent activity caused by livestock congregating on sites too long, which results in the destruction of rodent burrows, which in turn causes an increase in rodent activity recreating burrows.

Cumulative effects analysis, as with direct and indirect impacts, can only occur when historic properties are present. A cumulative adverse effect is based on the number of similar resources in the geographic unit, and if the affects would diminish a representative sample. Such a scenario would be classified under NEPA as irreversible, a loss of future options, since cultural resources are nonrenewable. Cumulative beneficial effects would be an action that would help protect a class, or classes of historic properties into the future, for a measurable amount of time. For example, removal of stock tanks located within a prehistoric or historic property would reduce trailing across the site. Such management would be considered a beneficial action.

A key source for determining direct and indirect effects are the inventory reports (e.g., O'Dell 2005; 2009) written for the project that have been concurred on by SHPO (Copy of letters in specialist report), as impacts are discuss in the reports. Other key sources for determining the potential of adverse cumulative effects are Forest Cultural Resource overviews (e.g. Boglioli, Marc and Nancy Stroupe 2005), and the Forest's electronic database.

Connected Actions, Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis

In general, with the exception of domestic livestock grazing, past actions such as recreation, vegetation management, and fire management, direct impacts represent a small percentage of impacts to historic properties in the past, present, and foreseeable future (USDAa 2005). The primary indirect impact associated with these programs occurs in relationship with past road construction that has allowed for easier access to areas. This has resulted in increased illegal surface collection of artifacts that over time, cumulatively, could lead to changing a site's status from eligible to ineligible. This impact is predicted to

continue into the future, and would have a high potential to increase, in proportion to any new road construction.

Livestock grazing is considered the leading action documented that has affected cultural resources in the past, present, and foreseeable future (e.g., Peterson and Laurent 2001; USDAb 2005), due to the fact that livestock grazing can cause isolated areas of overgrazing/impacts, while still meeting grazing standards. Based on monitoring data (e.g. Laurent 2008a; 2005), some level of ongoing impacts from grazing is expected to continue into the future for all Alternatives, though length and intensity would differ among Alternatives.

Alternative 1 – No Action

Design Criteria:

1. **Apply to all allotments:**
   - Before any NEPA decision can be signed, enter into an agreement document with SHPO and/or the Council and/or counseling parties for phase compliance, and
   - Record process in NEPA document.

Direct Effects

Under this alternative, all grazing would stop, range improvements would be removed, including such structures as cow camps, fences, and stock tanks. Many of these structures are over 50 years in age, qualifying them as cultural resources. The action of removal would be subject to the Section 106 process, as noted under the NHPA, and pursuant to the implementing regulation 36 CFR 800.

The exact number of properties that would be directly affected, positively or negatively, under this Alternative is unknown[8], as additional inventory would need to take place. At present, 13 properties have been identified as incurring impacts, and minimally 4 additional sites would be impacted when the alternative is implemented for a total of 17. The four additional sites are all historic cow camps, they would be removed, and as noted in the Forest Plan, their removal would be considered significant. Under the Forest's PA, treatment/ mitigation plans would have to be created and implemented in conjunction with SHPO for the 17 properties that are presently known to be incurring negative impacts.

Overall, because the Alternative stops grazing activities on the allotments, the potential for ongoing or new Direct Effects would be eliminated. Therefore, at a programmatic level, Alternative 1 would have the most beneficial affect on heritage resources of the alternatives proposed.

Indirect Effects

In general, indirect effects from grazing include erosion, increased rodent disturbance to intact cultural deposits, and vandalism in the form of surface collecting (USDAa and b 2005). Based on the work presently completed, 13 historic properties are incurring one or more indirect impacts. The majority of erosional impacts would stop within a few years, though the level could only be determined through monitoring. Indirect rodent disturbance would cease, though some level would continue as a natural process. Vandalism would continue, an uncontrolled activity, but visibility of artifacts from erosion and rodent disturbance would be reduced greatly.

[8] Specific data on the removal of stock tanks and cow camps was examined, but no review was conducted on the removal of fences. Generally, the removal of a fence by hand crews would meet the exclusion provision of the Forest's PA. However, this could only be determined through minimally a Class I file search that was not completed for this document.

Cumulative Effects

From the list of activities to consider for cumulative impacts, except grazing, all the items noted could have impacts to heritage resources, and the impacts are common to all alternatives. However, the potential and magnitude of impacts from activities listed (e.g., vegetation management, recreation, and fire management) are considered to be minimal, as the Forest Service completes Section 106 inventories before implementation of management actions, and has a policy of site avoidance. In other areas such as dispersed recreation, impacts have, are, and would continue, but no adverse impacts have been document in the last 20 years (USDA n. d.).

Incremental ongoing cumulative affects would include various forms of erosion caused by previous overgrazing, rodent disturbance, and vandalism. Under this alternative, ongoing cumulative impacts associated with erosion may continue on some properties. However, the impacts would be minimal, considered non-significant, and would cease to continue within in a few years via natural processes, such as vegetation regeneration and/or mitigation.

Rodent disturbance and vandalism would continue, and could potentially destroy the characteristics that make a property eligible to the NRHP. However, these impacts would no longer be associated with, or enhanced by livestock grazing.

At present, 4 permitted range related cow camps considered eligible to the NRHP would be removed. This site type is classified as rare (USDA 2005a), and their removal would be considered a significant cumulative adverse affect on the specific site type.

In summary, over the foreseeable future (3 to 5 years), the selection of Alternative 1 would eliminate the incremental impacts related to grazing. The removal of four cow camps would be considered an irreversible cumulative adverse impact. However, of the three Alternatives, Alternative 1 is considered to have the least affect to cultural resources, as impacts associated with grazing would be expected to stop within 3 to 5 years of implementation, resulting in no new occurring impacts from grazing.

Monitoring Recommendations, Alt. 1

Apply to all allotments:

- Monitor areas of high potential for impacts to historic properties when removing range structures,
- Monitor presently known impacted sites for three years to ensure recovery, and
- Report results at year-end to SHPO,
  - If successful (e.g., area re-vegetates and erosion/deflation stops), notify all parties and no further work needed
  - If impacts continue or new potential impacts are anticipated, consult with range and cultural resource specialists, and SHPO for solutions.
  - Establish a new monitoring process, and triggers if needed.

Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

- Based on the inventory data prepared for this document, implementation of any Alternative would help meet desired condition (DC) for Forest wide inventory. The inventory data would

also move the Forest forward in discharging areas from further field inventory, as well as releasing ineligible sites from future management requirements.

- The selection of Alternative 1 would result in non-compliance with the Forest Plan cultural resources requirements, and NHPA, as insufficient inventory has been completed. The Forest could enter into an agreement document with SHPO and/or the Council and/or consulting parties to complete additional inventory and analysis to meet legal requirements.
- A NEPA decision document could be signed once the proposed cultural resource agreement was completed. Specific language, as noted in the Forest's PA, would have to be included into the decision document referencing the new cultural resource agreement.

Other Relevant Mandatory Disclosures

Alternative 2 – Present Management

Design Criteria

1. **Beaver Creek Range:**
   A. Site 48BH196 and 48BH3588
      - Relocate water source (tank) off-site to approved area, and
      - Monitor for at least two years.
      - Based on monitoring data determine further needs and/or actions.

   B. Site 48BH3736
      - Fence adversely affected area for three years when cattle are utilizing pasture,
      - Monitor for at least three years, and
      - Based on monitoring data determine further needs and/or actions.

2. **Goose Creek Range:**
   - Site 48SH6
     - Place barriers to route cattle around isolated eroded areas if needed,
     - Monitor for at least three years, and
     - Based on monitoring data determine further needs and/or actions.
   - Site 48SH1543:
     - Fence in accordance with SHPO, range and cultural recourse specialists, and permittee comments,
     - Monitor for three years, and
     - Based on monitoring data determine further needs and/or actions at the end of three years.

3. **Little Horn Range**
   - Site 48SH1739, 48SH1741, and 48SH1744:
     - Relocate water source (tank) off-site to approved area, and
     - Monitor for at least two years.
     - Based on monitoring data determine further needs and/or actions.
   - Site 48SH1740
     - Implement archaeological data recovery in accordance with the Memorandum of Agreement (MOA) signed between the Forest and SHPO dated April 18, 2011.

4. **Rock Creek Range**:
   N/A

5 Tensleep Range:

A. Site 48WA3
- Implementation of protection measures in accordance with the MOA signed between the Forest and SHPO dated April 18, 2011 which include:
  - Fencing the portion of the contributing area of the site occurring impact for at least three years,
  - Establishing a new waterline and associated stock tanks outside the contributing portion of the site, and
  - Monitoring for at least three years.
- Based on monitoring data determine further needs and/or actions.

B. Site 48WA388
- Fence site for three years,
- Establish a new waterline and associated stock tank off site,
- Monitor for at least three years, and
- Based on monitoring data determine further needs and/or actions.

C. Site 48WA392
- Implementation of protection measures in accordance with the MOA signed between the Forest and SHPO dated April 18, 2011 that includes:
  - Fence contributing portion of site for three years,
  - Remove present stock tank from site and establish new tanks off-site, and
  - Monitor for at least three years.
- Based on monitoring data determine further needs and/or actions.

D. Site 48WA2197
- Relocate water source (tank) off-site to approved area, and
- Monitor for at least two years.
- Based on monitoring data determine further needs and/or actions.

Direct Effects

Thirteen historic properties, documented in inventory reports (e.g. Matthews 2008), are presently incurring impacts. In general, the impacts are related to overgrazing within site boundaries resulting in deflation, trail down-cutting, and erosional rills that overall result in destroying artifact spatial and physical integrity.

Indirect Effects

Indirect effects from grazing include erosion from spring run-off due to lack of sufficient vegetation and/or litter ground cover, and increase rodent activity that is caused when livestock congregate on sites to long. This results in the destruction of rodent burrows, which results in increased rodent activity to recreate new burrows, and vandalism in the form of surface collecting (USDAb 2005), as

the above actions increase exposure of artifacts. Based on the work presently completed, the same 13 historic properties noted in the direct impact section are incurring one or more indirect impacts.

Cumulative Effects

In relationship to cultural resources, the present analysis completed for this document shows that direct and indirect impacts are occurring to historic properties from grazing. Additionally, five historic properties have lost characteristics that at one time made them eligible to the NRHP. It would seem logical to assume that if Alternative 2 was selected, the same level of impacts would continue into the future. However, this would be incorrect, as the Federal Agency, by law, is obligated after learning of impacts to cultural resources to implement measures to mitigate those impacts.

Presently, the Grazing Permit Handbook and the Forest Plan provide direction and/or actions that could be implemented to lessen impacts to cultural resources presently being affected, and those through cumulative impacts into the future. Examples of actions include herding, changes in animal numbers, and rest rotation within the range program. Within the cultural resource program, increased monitoring could occur, during the life of the permit, to insure that ongoing impacts would remain at a level that would not endanger the characteristics that make the historic property eligible to the NRHP.

Because of the limited management actions allowed under Alternative 2, reaching and/or preserving the Desired Condition for cultural resources and range would take longer to achieve and could be more difficult to maintain than the other alternatives. Regardless of management, some level of impacts will continue to cultural resources. Whether the potential grazing impacts would be sufficient when added to other impacts such as natural water erosion to change the characteristics that make a site eligible is unknown. However, the potential is the highest with Alternative 2, and is therefore considered the least desirable alternative presented.

Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans (Heading 4)

- The actions proposed under the alternative are considered consistent with Relevant Laws, Regulations, Policies, and Forest Plan for cultural resources.

Other Relevant Mandatory Disclosures (Heading 4)

Monitoring Recommendations Alt 2

1. Beaver Creek Range:

A. <u>Site 48BH196 and 48BH3588</u>

- Monitor for two years with the use of two photo points within impacted area,
- Collect baseline photo data in the summer of 2011,
- Monitoring would begin the year following stock tank relocation,
- A monitoring report would be completed yearly, and placed in the cultural resource report file, and any pertinent data noted in the AMP and/or allotment file.
- At the end of two years:
  - If successful (area re-vegetates and erosion/deflation stops), notify all parties and no further work needed,

- If impacts continue or new potential impacts are anticipated, consult with range and cultural resource specialists, and SHPO for solutions (adaptive management), and establish a new monitoring process and triggers.

B. 48BH3736

- Monitor for three years with the use of two photo points and one archaeological quantitative transect within impacted area,
- Collect baseline data in the summer of 2011,
- Monitoring would begin the year following stock tank relocation,
- A SHPO monitoring report will be completed yearly and placed in the cultural resource report file, and any pertinent data noted in the AMP and/or allotment file.
- At the end of three years:
  1) If the site meets archaeological ground cover standard (75 to 80%[9] cover):
     - Remove fence,
     - Monitor for two years
       - If site meets archaeological standard and range allowable use guidelines at the end of the second grazing season, notify all parties that no further work is needed.
       - If site does not meet archaeological ground cover standard and range allowable use guidelines after second grazing season, consult with SHPO and permittee for solution(s)[10].
  2) If archaeological ground cover standard is not met or if new impact is anticipated:
     - Consult with SHPO and permittee for solution(s).

2. Goose Creek Range:

A. Site 48SH6:

i. Monitor site for three years with three photo points,

ii. Document results and any new recommendations in year-end-report to SHPO, and inform range specialist and permittee,

iii. At the end of three years make a determination of effect,
   - If successful notify all parties and stop monitoring,
   - If impacts are still occurring, recommend alternative solution(s) to SHPO for concurrence.

3. Little Horn Range

A. Site 48SH1739, 48SH1741, and 48SH1744

- Monitor for two years with the use of two photo points within impacted area,
- Collect baseline photo data in the summer of 2011,
- Monitoring would begin the year following stock tank relocation,
- A monitoring report will be completed yearly and placed in the cultural resource report file, and any pertinent data noted in the AMP and/or allotment file.
- At the end of two years:
  - If successful, notify all parties and no further work needed, and
  - If impacts continue or new potential impacts are anticipated, consult with range and cultural resource specialists, permittee, and SHPO for solutions (adaptive management).

4. Rock Creek Range:

[9] The exact percentage will be determined during the establishment of baseline data, to occur in 2011. Several factors can influence the percentage number, such as proximity to water and soil type and condition.
[10] Based on past long-term monitoring data, the best solution is to fence permanently.

- N/A

5. Tensleep Range:

A. Site 48WA3

- Monitor for three years with at least three photo points and two archaeological quantitative transects within the impacted area. One photo point will be located to capture an erosional area.
- Collect baseline data in the summer of 2011,
- Monitoring would begin the year the fence is installed,
- A SHPO monitoring report will be completed yearly and placed in the cultural resource report file, and any pertinent data noted in the AMP and/or allotment file.
- At the end of three years:
  1) If the site meets archaeological standard for ground cover:
     - Remove fence,
     - Monitor for two years,
       - If site meets archaeological ground cover standard and range allowable use guidelines, notify all parties that no further work is needed.
       - If archaeological standard for ground cover and/or range allowable use guidelines are not met, consult with SHPO and permittee for solution(s).
  2) If archaeological ground cover standard is not met or if new impact is anticipated:
     - Consult with SHPO and permittee for solution(s).

B. Site 48WA388

- Monitor for three years with at least two photo points and one archaeological quantitative transect within the impacted area. One photo point will be located to capture erosional area.
- Collect baseline data in the summer of 2011,
- Monitoring (end of grazing season) would begin the year the fence and new water actions are implemented,
- A SHPO monitoring report will be completed yearly and placed in the cultural resource report file, and any pertinent data noted in the AMP and/or allotment file.
- At the end of three years:
  1) If the site meets archaeological ground cover standard:
     - Stop/remove fence,
     - Monitor for two years
       - If site meets archaeological ground cover standard and range allowable use guidelines, notify all parties that no further work is needed.
       - If site dose not meet archaeological ground cover standard and range allowable use guidelines, consult with SHPO and permittee for solution(s).
  2) If archaeological ground cover standard is not met or if new impact is anticipated:
     - Consult with SHPO and permittee for solution(s).

C. Site 48WA392

- Monitor for three years with at least two photo points and two archaeological quantitative transect within the impacted area,
- Collect baseline data in the summer of 2011,
- Monitoring would begin the year the fence is installed,
- A SHPO monitoring report will be completed yearly and placed in the cultural resource report file, and any pertinent data noted in the AMP and/or allotment file.
- At the end of three years:

1) If the site meets archaeological ground cover standard:
   - Stop/remove fence,
   - Monitor for two years
     - If site meets archaeological standards and range allowable use guidelines at the end of two years, notify all parties and that no further work is needed.
     - If site dose not meet archaeological standards and range allowable use guidelines at the end of the two years, consult with SHPO and permittee for solution(s).
2) If archaeological ground cover standard is not met or if new impact is anticipated:
   - Consult with SHPO and permittee for solution(s).

D. Site 48WA2197

- Monitor for two years with the use of two photo points within impacted area,
- Collect baseline photo data in the summer of 2011,
- Monitoring would begin the following year after stock tank relocation,
- A monitoring report will be completed yearly and placed in the cultural resource report file, and any pertinent data noted in the AMP and/or allotment file.
- At the end of two years:
  - If successful (area re-vegetates and erosion/deflation stops), notify all parties and no further work needed,
  - If impacts continue or new potential impacts are anticipated, consult with range and cultural resource specialists, and SHPO for solutions (adaptive management).

Alternative 3 – Proposed Action

Design Criteria

1. Beaver Creek Range:

- Same as Alternative 2

2. Beaver Creek Vegetation Management:

A. In general, follow the criteria noted in the Forest's PA for vegetation management projects such as:
   - Undertake a Class I review regarding proposed project locations,
   - Document all acceptable and non-acceptable survey acres in the project areas,
   - Conduct a Class II survey in non surveyed areas associated with the proposed project locations,
   - Previously recorded eligible[11] and unevaluated sites will be inspected to determine potential of affects and eligibility,
   - Any historic property susceptible to impacts, identified through the files search, historic research, and/or field inventory will have a plan devised to protect these sites. The information will be incorporated into the specific project plan for implementation, and
   - Forward a report to SHPO for concurrence on eligibility determination(s), monitoring requirements, and overall implementation plan minimally resulting in a finding of *no adverse affect*, in accordance with the Forest's PA.

[11] Eligible site inspection can be accomplished by literature review, and/or field review if necessary.

3. **Goose Creek Range:**
    - Same as Alternative 2

4. **Goose Creek Vegetation Management:**
    A. In general, follow the criteria noted in the Forest's PA for vegetation management projects such as:
    - Undertake a Class I review of proposed project locations,
    - Document all acceptable and non-acceptable survey acres in the project areas,
    - Conduct a Class II survey in non surveyed areas associated with the proposed project locations,
    - Previously recorded eligible and unevaluated sites will be inspected to determine potential of affects and eligibility,
    - Any historic property susceptible to impacts, identified through the files search, historic research, and/or field inventory will have a plan devised to protect these sites. The information will be incorporated into the specific project plan for implementation, and
    - Forward a report to SHPO for concurrence on eligibility determination(s), monitoring requirements, and overall implementation plan minimally resulting in a finding of *no adverse affect*, in accordance with the Forest's PA.

5. **Little Horn Range**
    - Same as Alternative 2

6. **Little Horn Vegetation Management**
    A. In general, follow the criteria noted in the Forest's PA for vegetation management projects such as:
    - Undertake a Class I review of proposed project locations,
    - Document all acceptable and non-acceptable survey acres in the project areas,
    - Conduct a Class II survey in non surveyed areas associated with the proposed project locations,
    - Previously recorded eligible and unevaluated sites will be inspected to determine potential of affects and eligibility,
    - Any historic property susceptible to impacts, identified through the files search, historic research, and/or field inventory will have a plan devised to protect these sites. The information will be incorporated into the specific project plan for implementation, and
    - Forward a report to SHPO for concurrence on eligibility determination(s), monitoring requirements, and overall implementation plan minimally resulting in a finding of *no adverse affect*, in accordance with the Forest's PA.

7. **Rock Creek Range**:
    N/A

8. **Tensleep Range:**
    - Same as Alternative 2

Direct Effects

Thirteen prehistoric properties, documented in inventory reports (e.g. Matthews 2008), are presently incurring impacts. In general, the impacts are related to overgrazing within site boundaries, resulting

in deflation, trail down-cutting, and erosional rills that overall result in destroying artifact spatial and physical integrity.

Indirect Effects

Indirect effects from grazing that are occurring include erosion from spring run-off due to lack of sufficient vegetation and/or litter ground cover, and increased rodent activity which is caused when livestock congregate on sites too long. This results in the destruction of rodent burrows which results in increased rodent active to recreate burrows, and vandalism in the form of surface collecting (USDAb 2005), as the above actions increase exposure of artifacts. Based on the work presently completed, 13 historic properties are incurring one or more indirect impacts.

Cumulative Effects

At present, the analysis completed for this document shows that direct and indirect impacts are occurring to historic properties from grazing. Additionally, five historic properties have lost characteristics that could have made them eligible to the NRHP. However, the cultural materials noted place all the sites into the late Archaic Period which is well represented with intact sites across the Forest.

Under Alternative 3, the adaptive management strategy would be implemented. Present impacts from grazing to cultural resources would be managed to non-significant, pursuant to direction in 36 CFR 800, and the Forest's PA. The addition of new watering sources and various changes to methods of grazing (i.e., changes in fencing and/or pasture rotation) should reduce the potential for future impacts, though some level would be expected. It only takes for example, a small amount (4 by 4 feet) of overgrazing to adversely impact certain types of cultural resources.

The probability and length of time to reach desired condition under this Alternative is considered more likely, and could be accomplished sooner than Alternative 2. The main reason for this determination is that Alternative 3 would include the additional management actions noted.

Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

Based on the inventory data prepared for this document, implementation of any Alternative would help meet DC for Forest wide inventory. The inventory data would also move the Forest forward in discharging areas from further field inventory, as well as releasing ineligible sites from future management requirements.

Additional data recovery would occur under this Alternative. The data would help meet the need to define specific site types.

Other Relevant Mandatory Disclosures

Monitoring Recommendations

1. **Beaver Creek Range:**
    - Same as Alternative 2

2. **Beaver Creek Vegetation Management (Prescribed fire, aspen treatments, etc.):**
    - Monitoring needs will be determined by results of inventory reports submitted to SHPO, as noted in the design criteria associated with these actions.
    - In general, monitoring occurs during project-specific implementation, in the field, and consists of ensuring historic properties are avoided during implementation. Tools could include, for examples, black-lining around a historic property during prescribed burning, presence of a cultural resource person, or flagging site boundary during conifer encroachment for avoidance.
    - Include monitoring data in implementation plan.

3. **Goose Creek Range:**
    - Same as Alternative 2:

4. **Goose Creek Vegetation Management (Spike Moss):**
    - Monitoring needs will be determined by results of inventory reports submitted to SHPO, as noted in the design criteria associated with this action.
    - In general, monitoring occurs during project-specific implementation, in the field, and consists of ensuring historic properties are avoided during implementation. Tools include for example, flagging site boundary for avoidance and/or presence of a cultural resource person.
    - Include monitoring data in implementation plan.

5. **Little Horn Range:**
    - Same as Alternative 2

6. **Little Horn Vegetation Management**
    - Monitoring needs will be determined by results of inventory reports submitted to SHPO, as noted in the design criteria associated with these actions.
    - In general, monitoring occurs during project-specific implementation, in the field, and consists of ensuring historic properties are avoided during implementation. Tools could include for example, black-lining around a historic property during prescribed burning, presence of a cultural resource person, or flagging site boundary during conifer encroachment for avoidance.
    - Include monitoring data in implementation plan.

7. **Rock Creek Range:**
    - **N/A**

8. **Tensleep Range:**
    - Same as Alternative 2

References

Bedell, Thomas E. (Chairman)
2005 Glossary Of Terms Used In Range Management. Document was prepared by the Society for Range Management. A copy is on file at the Tongue Ranger District, Sheridan, Wyoming.

Boglioli, Marc and Nancy Stroupe
2005 Historic Overview of Land Use On The Bighorn National Forest. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

Eggleston, Patricia
2007 Class III Cultural Resource Inventory Of Bighorn National Forest's Rock Creek Range Allotment P.A., Johnson County, Wyoming. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

Horne, Stephen, and Janine McFarland
1993 Issue Paper Impacts Of Livestock Grazing On Cultural Resources. Prepared by the Heritage Resource Program, Los Padres National Forest, California. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

Jack, John
1900 Forest And Grazing Conditions In The Bighorn Forest Reserve Wyoming. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

Laurent, Rick
2005 Range Annual Summary Report Narrative And Summary Tables For 2004 Accomplishments. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

2008a Monitored Sites, North Tongue AMPs, FY 2007, 48SH17 (Hay Creek), 48SH331 (Camp Creek), 48SH1064 (Hidden Tepee Creek), And 48SH1107 (Fool Creek). A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming--EZ-08-08.

2008b Renewal Of Ten-Year-Term Grazing Permits For Big Goose, Little Goose, Little Goose Canyon, Tourist, Antler, Walker Prairie, and Rapid Creek, Tongue Ranger District, Sheridan Wyoming, Sheridan & Johnson Counties. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

2008c Draft File Search On Tensleep Watershed AMPs For Cost Estimate. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming-–— EZ-08-21.

2010 2008/2009 Tongue And Goose Watershed Year-End –Report--Monitoring/Updates On Renewal Of Term Grazing Permits For; Tongue Ranger District, Sheridan County. A copy of the report is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

2011 Big 6 Analysis For Spike Moss, Big Goose AMPs. The report is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

Matthews, W. Mc.

2008 Beaver Creek Analysis Area Allotment Class III Cultural Inventory, Bighorn National Forest, Big Horn and Sheridan Counties Wyoming. On file at the Medicine Wheel Ranger District Office, Lovell Wyoming.

Matthews, W. Mc.
2010 Tensleep Watershed Range AMP Class III Cultural Inventory, Bighorn National Forest, Big Horn, Jonson and Washakie Counties Wyoming. On file at the Medicine Wheel Ranger District Office, Lovell Wyoming.

Matthews, W. Mc.
2011 Big 6 NEPA Analysis for Little Horn and Beaver Creek AMPs RX Burns Class I Cultural Inventory, Bighorn National Forest, Big Horn and Sheridan Counties Wyoming. On file at the Medicine Wheel Ranger District Office, Lovell Wyoming.

O'Dell, Kevin
2010 Little Horn 2009 Section 106 and Section 110 Class III Cultural Resource Inventory, Bighorn National Forest, Big Horn and Sheridan Counties Wyoming. On file at the Medicine Wheel Ranger District Office, Lovell Wyoming.

O'Dell, Kevin
2010 Little Horn Section 106 and Section 110 Class III Cultural Resource Inventory, Bighorn National Forest, Big Horn and Sheridan Counties Wyoming, 2010 Field Season. On file at the Medicine Wheel Ranger District Office, Lovell Wyoming

Park Service Publications
1995 National Register Bulletin 15; How To Apply The National Register Criteria For Evaluation. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

Peterson, Michael, and Rick Laurent
2001 The Archaeological Resource Inventory Report, Tongue Watershed Grazing Allotment Renewals, Bighorn National Forest, Tongue Ranger District, Sheridan And Big Horn Counties. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

Sutton, Wendy
2006 2006 Goose Creek 110 Class III Cultural Resource Inventory, Bighorn National Forest, Johnson and Sheridan Counties, Wyoming. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

USDA (Bighorn National Forest)
1995 Memorandum Of Understanding Among The Rocky Mountain Region Of The U.S.D.A. Forest Service And The State Historic Preservation Offices Of Colorado, Wyoming, South Dakota, And Nebraska Regarding Rangeland Management Activities. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

2005a Heritage Resource Section, Chapter 3, Forest Service Plan, FEIS. Electronic file located on the O drive.
2005b Final Environmental Impact Statement For The Tongue Allotment Management Plan. A copy is on file in the 2360 Report File, Tongue Ranger District, Cultural Resource Office, Sheridan, Wyoming.

n.d.a Cultural Resource Electronic Database, INFRA.

n.d.b Historic Records located on the Tongue Ranger District, Sheridan Wyoming. The files contain, for examples, range condition 1914 to1986 (grazing, Drawer 1, Folder 36), early photos (Book 9), and newspaper articles from 1921 to 1926 (Book 18).

USDI
1991 National Register Bulletin 16: Guidelines For Completing National Register Of Historic Places Forms. Prepared by, the United States printing office, Washington D.C. http:''www.nps.gov/nr/publications/bulletins/nrb15/nrb15_6.htm

Considerations, Assumptions, And Philosophy:

I. Considerations:

A. Need to look at culture resources in the big picture. How many sites have had data recovery on, how many sites have been stabilized, etc.

B. Cultural resource management on the Forest has been primarily the result of adverse impacts in association with the implementation of actions proposed by other programs. Only since 2005 has the cultural resource program begun Section 110 inventory, for example.

C. Cultural resources are non-renewable. Therefore, any archaeological site has to be "armored" to support the argument that future grazing will never result in an impact to site.

D. In general, the management of Cultural Resources does not allow impacts (single event or incremental) to historic properties which **may** change the characteristics that make the site eligible. For this discussion, one has to keep in mind past, present, and most importantly, understand potential for future impacts under the philosophy of the National Historic Preservation Act, and 36 CFR 800. The use of **may** change sets up … "The threshold for effect is [as] quite low—requiring only the possibility of altering characteristics lending significance." (Horne and McFarland 1993).

E. Some knowledge of Seral stages is important for identifying historical and present impacts. Seral is defined as the whole series of plant communities that can develop in a given situation during plant succession. Seral developments are classified into four successional stages which are: early, mid, late, and full potential. The early stage is considered to range from 0-25% of potential natural community, mid-seral 26 to 50%, late 51 to 75%, and full potential 76 to 100% (Bedell 2005).

A site located in an early or mid seral stage probably has incurred impact(s) and/or has been influence in some way (e.g. drought, fire, grazing). If the site is presently incurring impacts from grazing, it may take several years of non-grazing and/or fencing to move the vegetation to a condition that grazing would not adversely affect the site. The preferred vegetation type from a cultural resource perspective, at minimum, is a late seral bunch grasses community.

F. PA And Mitigation:

- The Forest's PA with SHPO allows for fencing to be used to mitigate impacts as standard operation procedure (SOP), and no additional consultation with SHPO is needed. However, the fence is to include ***all*** contributing portions of the site—not just the impacted portion. This is done to protect the entire site from new impacts from fencing.

- Some design actions/features can be approved in the cultural resource report by SHPO, and does not need to be placed in an MOA (e.g., move present stock tank 100 meters off site).

II. Assumption/Monitoring Observations:

A. Prehistoric sites located within or adjacent to streams and springs were overgrazed historically (USDA n.d.b [photos; range reports]; Laurent 2005 [monitor reports]).

B. Past Impacts can be represented by (not all inclusive):
- Lack of plant productivity, for instance, the Soil Survey notes that dry-vegetation should be 1,500 lbs. per acre, but is presently only 900 lbs. per acre.
- Presence of livestock trails,
- The site area has a high percentage of plant types associated with overgrazing—dandelions, chickweed, etc.,
- Soil loss is noted by deflated areas with little or no vegetation, artifacts found in streams and bottom of rills, cobbles isolated on pedestals and/or not sodding-in, and exposures of substratum soil(s),
- Archaeological testing, across a site, shows lack of A horizon depth—should be 10 inches, but only averages 5 inches across site base on local soil survey data, and
- Archaeological test units contain soil structure similar to varving that reflects extensive sheet erosion.

C. Present Impacts can be represented by:
- Powdering of surface soils resulting in deflation,
- Removal of vegetation causing exposure of bare ground which is further conducive to a variety of soil erosion actions,
- Observation of new trailing, bogging/trampling, and creation of hummocks,
- New rills created during spring run-off, and enhancement of old rills,
- Exposure of new artifacts after spring run-off and/or after grazing,
- Indirect impacts are primarily artifact collecting, and increased rodent activity document by photos over fifteen years of monitoring (also see #4 below).

III. **Philosophy**:

A. Historic properties that have been impacted by past or present grazing should meet number 1, as well as at least 1 other archaeological standards/considerations listed below, before the protective fence is removed.
    1. Groundcover (live vegetation and litter) on eligible properties should range from 80 to 75%, if not, continue fencing. This range of ground cover is based on past monitoring analysis (e.g. Laurent 2005),
    2. Photo data showing a reduction and/or filling-in of rills and/or other erosional features,
    3. Reduction of Artifacts on the surface, for example, originally 10 artifacts per square meter in eroded area to 3 per square meter, and
    4. The site vegetation is classified as late seral.

B. Once a historic property has reached the standards/considerations noted in Section A. above, and the protective fencing is removed, the site should be monitored for at least two years to determine if affects return.

- After grazing, groundcover needs to meet 75 to 80% (the actual percentage should be determined during baseline data collection[12]). In addition, the range allowable use guideline within the site area needs to be met. Based on monitoring, at times you can meet the archaeological cover standard, but not meet the allowable use. This scenario has led to non-acceptable sheet erosion occurring in the spring (Laurent 2010). That is why both standards need to be met.
- It is important to collect range data within the site's boundary to cross-reference with the ground cover percentage. This supports the idea that the allowable use is not set too high to protect the cultural resource.
- Regardless of meeting ground cover and grazing use, if new rills begin you may need to increase the ground cover percentage and/or reduce allowable use, and/or change rotation, etc.

C. How to deal with impacts to sites when fencing is impractical.
- Scenario 1, range allowable use guideline should be around 15 %[13], until ground cover and or other considerations can be met, as noted in A and B above. In actuality, the percentage can only be determined by monitoring.
- Scenario 2, implement data recovery.

D. Defining the potential for future impacts.
- Allotments and/or pastures that have not met range allowable use guidelines (AUG) in the last four years, would pose a higher potential for future impacts then one that has met AUG three out of the last fours years. Again, this is based on monitoring data and the relationship of the pasture and area of the site meeting AUG, then the likelihood for meeting the archaeological ground cover standard is high.
- Allotments/pastures/ with vegetation in early seral stage have the highest risk for grazing to impact cultural resources. The risk is reduced as you move from early to full potential. The reason is that grasses and grass-like plants increase as you move upward through the stages. These plants are very efficient in the production of stable ground cover, versus forb plant types that generally are not good for the establishment of stable ground cover. Forbs generally decrease as you move through the seral stage.

[12] The exact percentage will be determined during the establishment of baseline data to occur in 2011. Several factors can influence the percentage number such as proximity to water, and soil type and condition.
[13] The amount of the vegetation removed during grazing.

Other Background Information:
Impacts from domestic grazing to vegetation and soils, and by analogy to cultural resources, were documented as early as 1900 (Jack). In fact, most historic Native American and Late Prehistoric surface and/or previously shallowly buried (12 cm or less) sites have been lost, and the Forest only has a few such sites that have been evaluated as eligible for the National Register of Places (NRHP). Most prehistoric sites located in the project area are Late Archaic in age or older, and are being exposed from erosion that in many cases is related to past and present grazing activities within the allotments under analysis. Due to the vulnerability of historic Native American and prehistoric sites to past and present grazing actions; numerous of these sites types have been lost, and those that are remaining could be lost within the next twenty years.

Historic Euro-American resources known in the area include; historic mining district and timbering activities, stock driveways and other grazing related features such as fences, stock tanks, cow camps, etc.; trails and roads, and Forest Service administration sites. Non-administrative historic sites are being impacted by natural deterioration versus grazing actions, while administrative sites are receiving no impacts from grazing (*ref.* Peterson and Laurent 2001, Sutton 2005, Forest Plan 2005).

Cost Estimate Tables
Alternative 1

Beaver Creek Alternative 1

Allotment Name/ Smithsonian #	**Site Type**	**Direct/Indirect Impacts**	**Mitigation Measures**	**Data Recovery/Other Cost**	**Total Cost**
48BH196	Prehistoric	Stock Watering Causing Deflation	Relocate Stock Tank	Once a year Monitor = $364 x 2 years =$728	$728.00
48BH3588	Preh	Deflation	Relocate Stock Tank	Once a year Monitor = $364 x 2 years =$728	$728.00
48BH3736	Preh.	Erosion	Relocate Stock Tank	Once a year Monitor = $364 x 3 years =$1092	$1,092.00
48BH343	Cow Camp	Removal	MOA SHPO[14]	Photos, Context, Interpretive Sign-Report	$10,000
Year-End-Reports				Monitor Report –3 yrs.	$4,500
Initial Class I					$364.00
Additional Inventory Cost				Field Inspection $364 x 8 days= $2912	$2,912.00
Report Documentation				$364 x 24 days	$8,736
Total:					***$29,060***

[14] Unit price decreases as number of sites included increases.

Little Horn Alternative 1

Allotment Name/ Smithsonian #	**Site Type**	**Direct/Indirect Impacts**	**Mitigation Measures**	**Data Recovery/Other Cost**	**Total Cost**
48SH1739	Preh.	Stock Watering Causing Deflation	Relocate Stock Tank	Once a year Monitor = $364 x 2 years =$728	$728.00
48SH1740	Preh	Deflation	Relocate Stock Tank	Same day as above	$728.00
48SH1741	Preh	Deflation	Relocate Stock Tank	Same day as above	$728.00
48SH1744	preh	Deflation	Relocate Stock Tank	Once a year Monitor = $364 x 3 years =$1,092	$1,092.00
48SH1737	Cow camp	Removal	MOA SHPO	Photos, Context, Interpretive Sign-Report	$8,000
Year-End-Reports				Monitor Report –3 yrs.	$4,500
Initial Class I					$364.00
Additional Inventory Cost				Field Inspection $364 x 8 days	$2,912
Inventory Report				$364 x 24 days	$8,736
Total:					***$27,788***

Goose Alternative 1

Allotment Name/ Smithsonian #	**Site Type**	**Direct/Indirect Impacts**	**Mitigation Measures**	**Data Recovery/Other Cost**	**Total Cost**
48SH6	Preh	Deflation/Small Areas of Overgrazing	Monitor	Once a year Monitor = $364 x 3 years =$1092	$1,092
48SH1543	Preh	Erosion—Rills /Overgrazing	Monitor	Once a year Monitor = $364 x 3 years =$1092	$1,092
48SH1547	Goose Cow Camp	Removal	MOA SHPO	Photos, Context, Interpretive Sign-Report	$5,000
Year-End-Reports				Monitor Report –3 yrs.	$4,500
Class I					$364
Additional Inventory Cost				Field Inspection $364 x 5 days= $1820	$1,820.00
Inventory Report				15 days x $364	$5,460
Total:					***$19,328***

Rocky Creek Alternative 1—***N/A*** = $0

Tensleep Alternative 1

Allotment Name/ Smithsonian #	**Site Type**	**Direct/Indirect Impacts**	**Mitigation Measures**	**Data Recovery/Other Cost**	**Total Cost**
48WA2197	Preh	Erosion/ Overgrazing	Monitor 3yrs-	Once a year Monitor = $364 x 3 years	$1,092
48WA3	Preh	Erosion/ Congregation	Fence/Stock Tank, Monitor	Once a year Monitor = $364 x 3 years	$1,092
48WA388	Preh	Deflation	Monitor	Once a year Monitor = $364 x 3	$1,092
48WA392	Preh	Erosion/ Congregation	Relocate Tank / Monitor	Once a year Monitor = $364 x 3 years	$1,092
Canyon Creek 48WA2213	Historic Cow Camp	Removal	MOA SHPO[15]	Photos, Context, Interpretive Sign-Report	$4,000
Initaial Class I					$364.00
Year-End-Reports				Monitor Report –3 yrs.	$4,500
Additional Inventory Cost				Field Inspection $364 x 8 days	$2,912.00
Report				24 days x $364	$8,736
Total:					***24,880***
All Allotments					***$101,056***

[15] Cost is based on cumulative of all allotments, if by it self would run $10,000 ca.

Beaver Creek Alternative 2 & 3

Allotment Name/ Smithsonian #	**Site Type**	**Direct/Indirect Impacts**	**Mitigation Measures**	**Data Recovery/Other Cost**	**Total Cost**
48BH196	Prehistoric	Congregation/ Erosion	Move Stock Tank And Monitor	Once a year Monitor = $364 x 2 years	$728.00
48BH3588	Preh	Congregation/ Erosion	Move Stock Tank And Monitor	Once a year Monitor = $364 x 2 years	$728.00
48BH3736	Preh.	Congregation/ Erosion	Fence And Monitor	Twice a year Monitor = $728 x 3 years	$2,184
Documentation Yearly Report				$364 x 8 days x 2(yrs); $364 x 4 days x 1	$5,824 $1,456
Sub-Total:					**$10,920**
Veg Mgt Alternative 3 Only				**Action Item**	
Updated Class I				c. 5 Class I, 5 days at $364	$1,820
Inventory				5 Projects, 250acres per or 1,250. 50 acres per day = 25 days at$364 per day	$9,100
Report/Burn Plan/INFRA				50 days	$18,200
Sub-Total					**$29,120**
Totals:					**$40,040**

Little Horn Alternative 2 & 3

Allotment Name/ Smithsonian #	**Site Type**	**Direct/Indirect Impacts**	**Mitigation Measures**	**Data Recovery/Other Cost**	**Total Cost**
48SH1739	Preh.	Deflation From Congregation at Tank	Relocate Stock Tank	Once a year Monitor = $364 x 2 years =$728	$728.00
48SH1740	Preh	Same	Relocate Stock Tank	Data Recovery	$25,000
48SH1741	Preh	Same	Relocate Stock Tank	Once a year Monitor = $364 x 2 years	$728
48SH1744	Preh	Same	Relocate Stock Tank	Same day as above	$728
Documentation Yearly Report				$364 x 6 days x 2(yrs);	$4,368
Sub-Total:					**$31,552**
Veg Mgt Alternative 3 Only				**Action Item**	
Updated Class I				c. 5 Class I, 5 days at $364 per day	$1,820
Inventory				5 Projects, c. 300 acres per or 1,500. 50 acres per day = 30 days at$364 per day	$10,920
Report/Burn Plan/INFRA				60 days	$21,840
Sub-Total:					**$34,580**
Total:					**$66,132**

Goose Alternative 2 & 3

Allotment Name/ Smithsonian #	**Site Type**	**Direct/Indirect Impacts**	**Mitigation Measures**	**Data Recovery/Other Cost**	**Total Cost**
48SH6	Preh	Deflation-Overgrazing In A Few Small Areas	Monitor	Monitor 3 yrs.=$1092 & tree placement $1,000—ca. 3 days	$2,092
48SH1543	Preh	Erosion/ Overgrazed	Fence, Monitor	Monitor, 1,800	7,600
Total:					**$9,200**
Veg Mgt Alternative 3 Only				***Action Item***	
Updated Class I				2 days x $364 per day	$728
Inventory				c. 300 acres at 50 per day = 6 x $364	$2,184
Report/Burn Plan/INFRA				14 days	$5,096
Sub-Total:					**$8,008**
Goose Total:					**$17,208**

Rocky Creek Alternative 2 & 3—***N/A***

Tensleep Alternative 2 & 3

Allotment Name/ Smithsonian #	**Site Type**	**Direct/Indirect Impacts**	**Mitigation Measures**	**Data Recovery/Other Cost**	**Total Cost**
48WA2197	Preh	Deflation From Congregation at Tank/Salt	Relocate Tank & Salt-- Monitor	Once a year Monitor = $364 x 2 years	$728.00
48WA3	Preh	Deflation, Overgrazing	Monitor, Fence, Water	Twice a year Monitor = $728 x 3 years	$2,184
48WA388	Preh	Deflation	Fence, Monitor	Twice a year Monitor = $728 x 3 years =$2184	$2,184
48WA392	Preh	Deflation From Congregation at Tank	Fence, Relocate Tank, Monitor	Once a year Monitor = $364 x 2 years =$728	$728.00
Documentation Yearly Report				$364 x 24 days	$8,736
TensleepTotal:					**$14,560**
Goose					**$17,208**
Beaver					**$40,040**
Little Horn					**$66,132**
Rock Cr-N/A					
Tensleep					**$14,560**
All Totals					$137,940

Cost of mitigation is based on 2010 estimates plus 5% for inflation from outside contracts on similar tasks, passes cost from projects completed by Forest Service personnel, or quotes from supplier.

a. Buck and pole fence equals $6 per ft.,
b. Barbwire fence-- $1.50 per ft.,
c. Electric fence--$.50 per ft.,
d. Carbon sample (C-14) $320 each,
e. Float samples (FS) $120 each,
f. Pollen analysis (PA) $170 each,
g. Geomorphology analysis (GA) $1000 per site,
h. Obsidian analysis (OA) $100 each, and
i. Data recovery equals $2,000-2,400 ca. per cubic meter excavated or GS rate x days
j. Unknown special skilled person or analysis (SP)

ATTACHMENT 1

Rangeland Management And Livestock Grazing Activities:

I. DESCRIPTION (Range Management)

The USDA Forest Service administers the Rangeland and Livestock Grazing programs as authorized by the Multiple Use Sustained Yield Act (P.L. 86-517, 74 Stat. 215; 16 U.S.C. 528), the Forest and Rangeland Renewable Resources Planning Act (P.L. 93-378, 88 Stat. 476, as amended: 16 U.S.C. 1601), and the Public Rangelands Improvement Act (92 Stat. 1803, 43 U.S.C. 1752-1753, 1901-1908). The Forest Service has determined that the Rangeland and Livestock Grazing Management Programs may affect Historic properties and agrees to responsibly comply with the provisions contained in the National Environmental Policy Act (NEPA) (42 U.S.C. 4321-4347) pursuant to 40CFR parts 1500-1508 and the 1995 Rescission Act (P. L. 104-19), which specifically requires NEPA analysis and decisions on grazing allotments according to a prescribed schedule. Therefore, the Forest Service, the ACHP, and the SHPO agree that Rangeland Activities shall be administered in accordance with the following stipulations to satisfy the Forest Service's Section 106 responsibility for all individual undertakings of the program.

II. MANAGEMENT PROTOCOL

Consideration of cultural resources as they are affected by rangeland and livestock grazing activities will be normally accomplished during the Allotment Management Plan preparation or modification as part of compliance with NEPA. Class II inventory, if any, will focus on those areas determined to be most at risk from grazing activities and associated improvements. Historic properties that appear to be affected by livestock grazing and other rangeland activities will be monitored to determine the extent of the effect, and to provide information about suitable treatment/protective measures.

III. STANDARD INVENTORY STRATEGY

In most cases, allotment boundaries shall be considered the Area of Potential Effect. Because these areas are usually extremely large, the focus of analysis will be limited to livestock congregation areas and their intersection with areas known or likely to contain cultural resources.

The Heritage Program Leader shall contact the Forest and District Rangeland Management Staff to define areas where livestock tend to congregate. Congregation areas should be defined based upon the number of livestock in the allotment, the duration, and the likelihood of soil and other resource damage. The Heritage Program Leader shall then determine additional inventory needs, if any, based upon the specific environmental and cultural setting of each analysis area, using the following strategy:

1) The Forest Rangeland Management Staff will help to define areas within the analysis boundary where livestock tend to congregate. Standard predictive variables may include, but are not limited to, the following:

a) Adjacent to existing livestock management improvements such as water tanks, fences, and handling structures
b) Unimproved areas where livestock congregate to drink
c) Near salting areas

2) The Heritage Program Leader will define areas most likely to contain cultural resources, based on standard archaeological modeling variables such as nearness to water, slope and elevation, and presence of known sites. Standard predictive variables may include, but are not limited to, the following:
a) Within ¼ mile of permanent water
b) On slopes less than 15%
c) On topographic prominences, such as ridge tops, saddles, and high points
d) Near ecotonal boundaries

3) The intersection of these two variables shall be the focus of analysis, and additional field inventory, if any, will occur there.
4) The Heritage Program Leader may determine that no additional inventory is required, if:
a) The areas identified in 3) above have been adequately inventoried to current standard, or
b) There are no intersecting areas identified in 3) above

IV. ADDITIONAL STIPULATIONS

The Forest Service will ensure that the following measures are carried out during the course of rangeland and livestock management activities:

A. Evaluation and Effects

Within areas of livestock congregation, all previously recorded historic properties will be examined for potential damage due to rangeland and livestock management activities. All unevaluated sites within this area will be evaluated for National Register eligibility. Results of evaluations and effects shall be included in the inventory report for the given allotment or group of allotments.

B. Monitoring

If damage or potential damage is noted on newly recorded and previously known historic properties within livestock congregation areas, but the cause, degree, or extent is unclear, the site will be monitored at least once a year to help determine whether or not protective measures are needed. Any prescribed monitoring of sites and impacts will be discussed in the inventory report, and subsequent monitoring will be described in the annual report to SHPO, and will recommend either continued monitoring or implementation of appropriate protective measures.

C. Standard Site Protective Measures

Appropriate treatment and a schedule for implementation will be prescribed for historic properties identified through each Forest's inventory and monitoring efforts. Appropriate treatments may include improved rangeland condition or retention of higher vegetative

structure, avoidance, long-term studies, or other actions such as fencing, changes in time/timing or frequency/duration of livestock use. If fencing is used as a protective measure, the Heritage Program Leader and Rangeland Management Staff will determine the appropriate amount and design of acreage to be fenced, and the most appropriate and effective type of fencing to be employed, based on the best method to eliminate the adverse effect. The inventory report will describe protective measures and the schedule for implementation. As protective measures are implemented, they will be described in the annual report to SHPO. Protective measures that involve data recovery or other changes to the site matrix require consultation with SHPO.

D. Improvements are Treated as Separate Undertakings

Rangeland and livestock management improvements including but not limited to water developments, fence construction (except as noted in Appendix A), and livestock handling facilities shall be considered undertakings in accordance with Section 106 of the NHPA, and shall comply with provisions of this PA or with 36 CFR § 800.4 through 800.6.

Attachment 2

Direction For Vegetation And Grazing Management Activities
Attachment A (Forest Service PA 2009)

I. DESCRIPTION (Vegetation Management)

The Forest Service conducts vegetative management activities (usually associated with hazardous fuel reduction, commercial timber sales, insect and disease outbreaks, and protection of homes along the Wildland-Urban Interface). These undertakings may have an adverse effect on properties eligible for or included in the National Register of Historic Places. The Forest Service, the ACHP, and the SHPO agree that vegetation management activities shall be administered in accordance with the following stipulations to satisfy the Forest Service's Section 106 responsibility for all individual undertakings of the program.

II. MANAGEMENT PROTOCOL

Forest Service vegetation management programs encompass two general project planning processes: 1) individual, stand-alone projects; and 2) vegetation management as a tool for meeting management objectives in a broad-scale analysis area.

A. Response to specific projects analyzed under the NEPA process as stand-alone undertakings. For a specific project which documents treatment units, location and type of treatments, and all other associated activities, the Forest Service will carry out the following actions to identify, evaluate, and take into account the effects of the proposed vegetation management activities on historic properties before issuing a NEPA decision:

   1) The Forest will complete a field inventory of the Area of Potential Effect of each vegetation management project following procedures defined below in Stipulation III.

   2) The Forest shall document the results of the field inventory, consultation with Indian Tribes, and any proposed measures to avoid adverse effects to historic properties in an inventory report as defined in Section IV.F.

B. Response to large area analyses where discrete vegetation management activities are not specifically defined, or where completion of Section 106 compliance for all aspects of the undertaking prior to reaching a NEPA decision is not reasonably possible. The following actions will be completed as part of the Forest's environmental analysis under NEPA, and prior to issuance of either a FONSI or a ROD:

   1) The Environmental Analysis (EA) or Environmental Impact Statement (EIS) will include a heritage specialist Summary Report which does not disclose sensitive site information, but discusses significant sites within the areas potentially affected by vegetation management activities. The Heritage Program Leader will use this information as a basis for determining potential effects of the proposed vegetation management activities on historic properties. The FONSI or ROD will contain

specific language requiring the Forest to inventory for and assess effects to historic properties once site-specific plans and silvicultural prescriptions are developed. The Decision Notice will also reference this agreement and condition the decision on completion of inventory and compliance with the applicable provisions of this PA.

2) The following actions will be carried out by the Forests after the NEPA decision is made:

a) The Forest will develop specific burn plans and/or detailed silvicultural prescriptions. Project areas or burn units will be subject to a sample inventory as defined in Stipulation III.

b) The Forest Service will conduct consultation through the NEPA scoping process as defined in this PA for the identification of properties of traditional cultural and religious significance to Indian Tribes or other interested parties. Additional consultation may be carried out depending on the results of the identification effort. Forests will conduct tribal consultation on vegetation management as early as possible in the NEPA process, and not after a NEPA decision is made. Forests should do broad-scale consultation within the NEPA process and again when specific plans are in place under NHPA. Site specific consultation with the Tribes should be conducted.

c) If the Forest Service determines that adverse effects cannot be avoided, or if the SHPO objects to a finding of no adverse effect, the Forest Service will rescind the portion of the Decision Notice which implements the specific project for the analysis area and consult further in accordance with 36 CFR § 800.6 to resolve the adverse effects.

III. STANDARD INVENTORY STRATEGY

The Forest will complete inventories within Areas of Potential Effect (APE) for vegetation management activities using the following inventory strategy. The APE shall be defined by the Heritage Program Leader on a project-by-project basis, based upon the types of proposed activities and their intensity. Should the strategy for any given project differ from these standards, the Forest shall submit electronic maps and justification to the SHPO for approval prior to conducting the inventory. Any of these approved changes will be noted and justified in the inventory report.

A. General

1) In all cases, field observations will also be used to identify areas of high or low site potential that cannot be specifically noted until field work begins. Inventory strategies may be altered as needed based upon these observations.

2) All areas of known high site density within the APE will be intensively inventoried.

3) For prescribed burning activities, all historic properties or unevaluated sites susceptible to burning identified through the files search and historic research will be visited and a plan devised for protection of these sites will be developed. This plan will be a part of the inventory report.

4) Within one year after prescribed burns, the Forest Service will revisit any protected historic properties to evaluate protection techniques and effectiveness. Results of this evaluation will be communicated to SHPO via letter, and any needed follow-up measures will be negotiated at that time.

B. Strategy for those areas planned for prescribed fire:

1) Open Grass and Sagebrush Settings – short duration, low and/or moderate level of fire severity.

a) Previously recorded eligible and unevaluated properties will be inspected. A primary objective will be to identify any subsurface features which may be exposed to the surface, such as a fire hearth, which could be affected by a low intensity/low duration fire.
b) A Class II inventory (as defined in Appendix A) will be conducted through each burn unit to look for wood features, exposed archaeological features, and rock art panels, which could be affected by the prescribed fire. The inventory will provide for a visual inspection of the open burn unit where the presence or absence of standing wood features can be confidently documented.
c) Inventory transects will also be used to inspect stream cut-banks, road cuts and other open locations where there is potential for exposed sub-surface deposits or features.
d) All machine constructed fire lines will be intensively inventoried.

2) Forested Settings – short duration, low and/or moderate level of fire severity.

a) Previously recorded eligible and unevaluated properties will be inspected. A primary concern will be to identify any subsurface features which may be exposed to the surface, such as a fire hearth, and which could be affected by a low intensity/low duration fire.
b) Intensive inventory coverage will be implemented using a GIS model according to the following criteria, and identified areas with these characteristics will be inventoried:

(i) Forested areas with a slope of less than 15% and within .25 mile from permanent water (i.e. streams, creeks etc.);
(ii) Geological features such as saddles, terraces, benches, overhangs, escarpment edges, and high points;
(iii) Those areas regardless of slope and cover where chert bearing formations are exposed or contain known stone quarry sites;
(iv) Stream terraces or benches;
(v) Rock shelters;
(vi) Mines;
(vii) Prominent rock faces which contain or are likely to contain Native American rock art properties;

(viii) Historic structures (eligible, potentially eligible, or unevaluated) identified during the literature search process that includes a review of Forest files, county library, and courthouse records;

e) All machine constructed fire lines will be intensively inventoried.

3) Burn Units (Open and Forested) – long duration, moderate and/or high level of fire severity.

a) An intensive inventory will be conducted over all areas where planned severity levels would be considered moderate or high and long duration.
b) All machine constructed fire lines will be intensively inventoried.

C. Strategy for those areas planned for mechanical vegetative management:

1) Open Canopy and Sagebrush Settings

a) Areas of open canopy or sagebrush within the APE will be subject to Class III (complete) inventory.
b) Inventory transects will also be used to inspect stream cut-banks, road cuts and other open locations where there is potential for exposed sub-surface deposits or features.

2) Forested Settings

a) A Class II inventory strategy will be implemented using a model according to the following criteria:

(i) Forested areas with a slope of less than 15% and within .25 mile from permanent water (i.e. streams, creeks etc.),
(ii) Geological features such as saddles, terraces, benches, overhangs, escarpment edges, and high points;
(iii) Those areas regardless of slope and cover where toolstone bearing formations are exposed or contain known stone quarry sites;
(iv) Stream terraces or benches;
(v) Rock shelters;
(vi) Mines;
(vii) Prominent rock faces which contain or are likely to contain Native American rock art;
(viii) Historic structures identified during the literature search process that includes a review of SHPO records, Forest files, county library, and courthouse records;
(ix) Areas in aspen stands near trails, meadows, and other features where aspen art is likely to occur.

IV. ADDITIONAL STIPULATIONS

The Forest Service will ensure that the following measures are carried out during the course of Vegetation Management Activities:

A. Evaluation and Effect Within the Area of Potential Effect (APE), all previously recorded historic properties will be considered during project planning, and every effort will be made to avoid these sites through project design. All newly recorded and unevaluated sites within the APE will be evaluated for National Register eligibility. Results of evaluations and effects shall be included in the inventory report.

B. Standard Site Protective Measures Appropriate treatment will be prescribed for historic properties identified through each Forest's inventory efforts. Appropriate treatments may include avoidance and project redesign. The inventory report will describe any protective measures required, and no consultation is necessary if avoidance is the prescribed treatment (see Section IV.G.3). The use of fire protections (black lines; foam; protective fabric) or other mitigation measures will require consultation with SHPO prior to implementation.

Supplemental Comments/Analysis: Post 01/01/2011

Response to ID Team Meeting 3/18/11

Item 1: response to potential Big Horn sheep analysis

- Sufficient inventory has been completed, but additional design criteria could be needed.

Item 2: Potential Conversion of any allotment from cattle to sheep or visa-versa

- Again, sufficient inventory has been completed, but specific analysis would be needed to define, for instance, locations for sheep watering, or cattle loading pens, etc. Then base on the analysis define design criteria.

Item 3: Risk Assessment of Contact between Domestic Sheep and Bighorn Sheep on the Bighorn National Forest—Version 13

- Based on Version 13, the localities where domestic sheep could be penned along ingress/egress routes have been analyzed for potential affect, pursuant to the Forest's cultural resource PA. Analysis followed the procedures concerning the probable areas most likely to be affected by sheep grazing and/or trailing, and was evaluated as part of previous AMP reports (i.e., Matthews 2008). However, as part of cultural resources best practices to minimize the potential impacts to unknown or recently recorded cultural resources, if corralling domestic sheep occurs the following procedure would be followed:
    1. The range staff is required to contact the appropriate cultural resource staff (CRS),
    2. CRS will complete a Class I on the location,
    3. If the Class I reflects a potential for impacts to a cultural resource, the CRS will define a suitable location, and document in year-end report,
    4. If no concerns are noted by the Class I, the CRS will inform the concerned parties that the location is acceptable. The Class I data will be documented in the year-end report.

Edits 5/18/11

Rick - here is what the section says after our groupy editing session. Thanks for your help! New stuff is in red.

Alternative 3

Direct and indirect effects: Thirteen historic properties are presently incurring impacts (Matthews 2008). In general, the impacts are related to overgrazing within site boundaries, resulting in deflation, trail downcutting, and erosional rills that overall result in destroying artifact spatial and physical integrity. Five historic properties have lost characteristics that could have made them eligible to the NRHP. However, the cultural materials noted place all the sites into the late Archaic Period which is well represented with intact sites across the forest.

Indirect effects from grazing include erosion from spring runoff due to lack of sufficient vegetation and/or litter ground cover and increased rodent activity caused when livestock congregate on sites too long. Concentrated livestock activity destroys rodent burrows which results in increased rodent activity to recreate burrows. Vandalism in the form of surface collecting (USDA 2005a) may also increase as the above actions increase exposure of artifacts.

Under alternative 3, adaptive management strategies would be implemented. Present impacts from grazing to cultural resources would be managed to non-significant, pursuant to direction in 36 CFR 800, and the forest's PA. The addition of new watering sources and various changes to methods of grazing (e.g., changes in fencing and/or pasture rotation) should reduce the potential for future

impacts, though some level of impacts would still be expected. Because of the adaptive management options available, the probability and length of time to reach desired condition under alternative 3 are considered to be more likely and could be accomplished sooner than alternative 2.

For the proposed vegetation management activities under alternative 3, there would be no direct, indirect, or cumulative effects. A survey and SHPO concurrence with a *no effect* determination would occur in accordance with the PA. If eligible heritage resources would be adversely affected by the vegetation management activities, these culturally sensitive areas would be removed from the proposed treatment units or otherwise be protected. The nature of the protective measures would be coordinated with SHPO and would be described in subsequent treatments plans (e.g., a burn plan for prescribed burning). For specific vegetation management direction in the PA, see Attachment 2 of the cultural resources specialist report.

Leslie Horsch, lhorsch@fs.fed.us
Writer-editor, Bighorn National Forest
2013 Eastside Second St.
Sheridan, WY 82801
(307) 674-2632
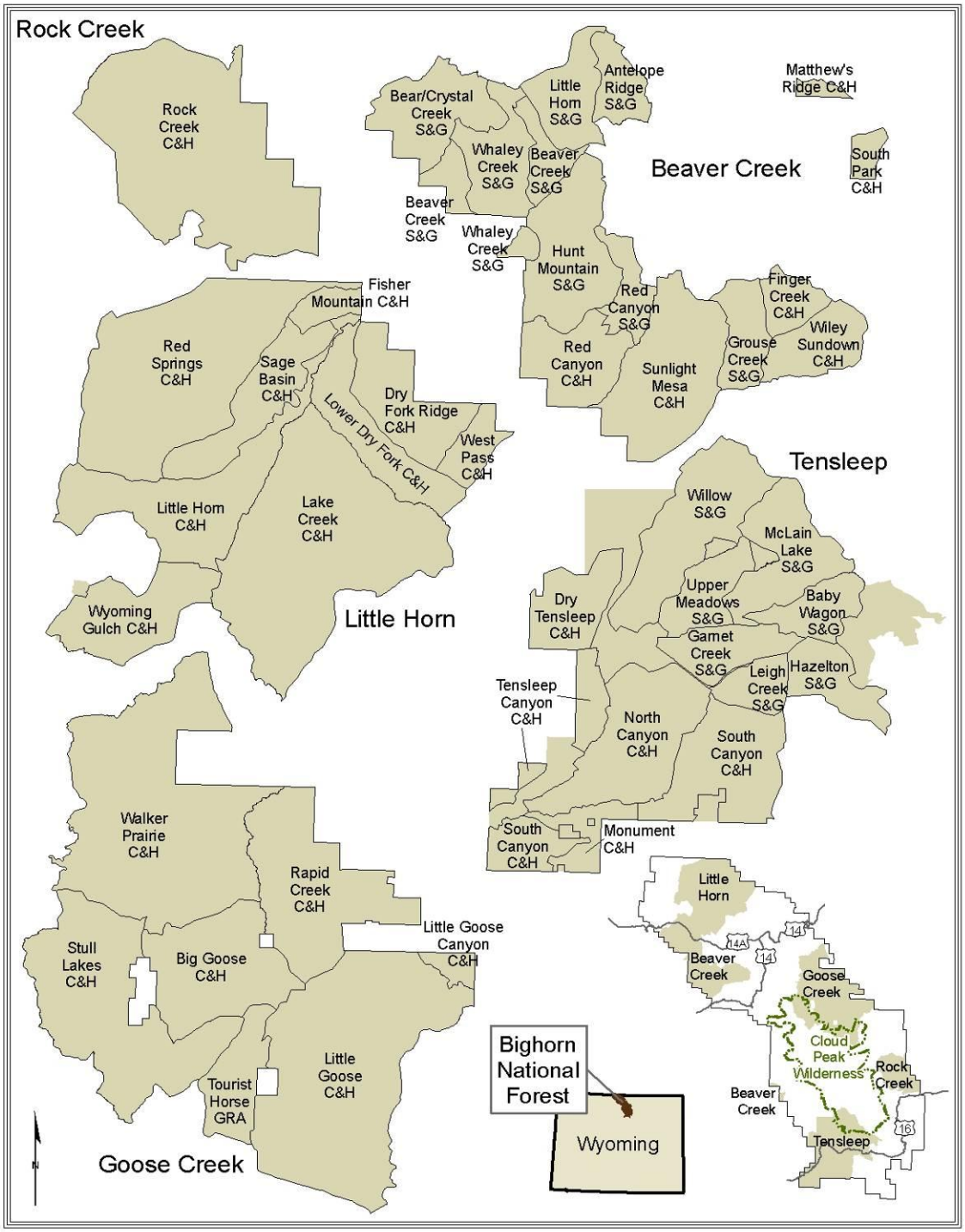
Figure **Error! No text of specified style in document.**-1. Vicinity map of the Big 6 project areas.