

# BIOLOGICAL OPINION

## 1.0 INTRODUCTION

In accordance with section 7 of the Endangered Species Act of 1973 as amended (16 U.S.C. 1531 et seq. [ESA]), and the Interagency Cooperation Regulations (50 CFR 402), this document transmits the United States Fish and Wildlife Service's (Service) Biological Opinion (Opinion) for the Natural Resources Conservation Services' (NRCS) USDA Farm Bill programs, including the Sage Grouse Initiative (SGI), and associated procedures, conservation practices, and conservation measures for the Gunnison sage-grouse (*Centrocercus minimus*). Your April 21, 2014 Biological Assessment (BA) and letter requesting section 7 formal conferencing were received in our office on April 21, 2014.

This Opinion is based on information provided in the NRCS' document dated April 21, 2014; subsequent discussions between our staffs; and other sources of information. A complete administrative record of this Opinion is on file at this office.

This Opinion establishes ESA compliance for NRCS, current and future participants implementing an approved Working Lands for Wildlife conservation plan or implementing conservation practices affecting Gunnison sage-grouse or its habitat, as considered within this Opinion. This Biological Opinion takes effect concurrent with the effective date of the grouse's listing as a threatened species on December 22<sup>nd</sup>, 2014.

## 1.1 Biological Opinion Background

The Service's 2010 Conference Report (Report) for the NRCS's SGI evaluated the collective, landscape-level effects of implementing all aspects of NRCS' SGI and related planning process on both the GUSG and Greater sage-grouse (*Centrocercus urophasianus*), and provided the Service's views regarding those effects. The Report also provided a potential path to regulatory certainty for participants who voluntarily implement the Report's conservation practices and conservation measures in the case of listing for either sage grouse. Such regulatory certainty will result from a subsequent Biological Opinion that will adopt this Biological Opinion.

At the time the Report was developed, the Service was conducting a 12-month status review to determine whether the GUSG warranted protection under the ESA. It was later determined warranted but precluded (75 FR 59804 59863). On November 20, 2014, the Service determined that protection under the Endangered Species Act (ESA) is warranted for the Gunnison sage-grouse, and has finalized a rule to list the species as threatened ([79 FR 69192](#)). We have also designated critical habitat on 1,429,551 acres in southwestern Colorado and southeastern Utah ([79 FR 69312](#)).

In the Report, it was identified that "If either species is proposed to be listed under the ESA, the agencies will consider development of a conference opinion", and that "NRCS and the Service will use this Report as a foundation for continuing collaborative conservation efforts to address the declining status and habitat needs of both the greater and Gunnison sage-grouse".

Consequently, the January 11th, 2013 proposed listing action gave rise to NRCS' April 21, 2014 request to seek a Conference Opinion that included exemption for incidental take caused by unavoidable impacts to GUSG. These impacts are the result of activities designed to result in long-term benefits to the species. From this point the agencies began work on converting the Conference Report to a Conference Opinion for the GUSG.

## 1.2 Conversion of the Conference Report to a Biological Opinion

Note: This Opinion does not change the existing 2010 SGI Conference Report as related to the Greater sage-grouse (*Centrocercus urophasianus*). The agencies may revise the Report at a later date to provide the necessary updates. The NRCS request of April 21, 2014, asked the Service to prepare a Conference Opinion that exempts take of GUSG incidental to activities conducted in accordance with the NRCS' SGI and other NRCS conservation programs and activities consistent with Gunnison sage-grouse conservation as outlined in Part 2.4 below. To do this NRCS proposed to convert the Report into a Conference Opinion focusing specifically on the GUSG and its proposed critical habitat as outlined and explained herein. The take exemption would apply to NRCS activities and any program participant engaging in activities described in Part 2.0 below.

This Opinion builds upon, refines, and updates the Report for GUSG in several ways, including:

- A. Recognizes and explains the linkage between the NRCS' Sage Grouse Initiative (SGI) and the Working Lands for Wildlife effort (WLFW) (refer to Part 2.4 below).
- B. Updates four (4) NRCS conservation practices that had national changes.
- C. Includes NRCS Conservation Stewardship Program (CSP) Enhancement Activities (Table 2).
- D. Updates funding and program authorities based on the 2014 Farm Bill.
- E. Refines the Action Area.
- F. Provides an Incidental Take Statement and a determination on effects to proposed critical habitat.
- G. Provides clarification on coordination with State Wildlife Agencies consistent with the original intent of certain conservation measures included in the 2010 SGI Conference Report.

### 1.2.1 Update of covered NRCS conservation practices

The following NRCS conservation practices have either had National updates since the development of the 2010 SGI Conference Report or were added or deleted:

- 512 - Pasture and Hayland Planting had a name change to Forage and Biomass Planting,
- 384 - Forest Slash Treatment had a name change to Woody Residue Treatment,
- 516 - Pipeline had a name change to Livestock Pipeline, and
- 431 - Above Ground, Multi-Outlet Pipeline has been incorporated into practice Irrigation System, Surface & Subsurface (443),
- 649 - Fish and Wildlife Structure (734) had changed to Structures for Wildlife (649),
- 638 - Water & Sediment Control Basin was added as limited use practice,
- 612 - Tree/Shrub Establishment was added as limited use practice,
- 587 - Structure for Water Control was added as limited use practice,
- 578 - Stream Crossing was added as limited use practice,

561 - Heavy Use Area Protection was added as limited use practice,  
362 – Diversion was added as limited use practice.

### *1.2.2 Inclusion of Enhancement Activities*

In addition to conservation practices, NRCS utilizes Enhancement Activities through the NRCS Conservation Stewardship Program (CSP). Enhancement Activities can directly correlate with the NRCS conservation practices evaluated, and were therefore included in the Biological Opinion. They will have the same associated procedures and conditioning/conservation measures as their corresponding conservation practice (refer to Part 2.3.2) and summarized in Table 2.

### *1.2.3 Update of Funding and Program Authorities*

NRCS offers voluntary conservation programs that benefit both agricultural producers and the environment, as newly authorized under the conservation title of the Agricultural Act of 2014 (2014 Farm Bill). The Report had been developed under the previous 2008 Farm Bill.

Farm Bill programs provide both technical and financial assistance to participants in the form of conservation planning assistance, payments to offset a portion of the cost associated with applying conservation practices, and easement or rental payments for long-term conservation. Although participation in Farm Bill programs is voluntary, participants that receive financial assistance enter into binding contracts or easements to ensure that conservation practices are applied according to schedule and in compliance with NRCS standards and specifications.

### *1.2.4 Refined the Action Area*

The 2010 Conference Report used ‘core areas’ as delineated by a coalition of partner agencies, universities and non-governmental organizations. The Opinion has refined this for GUSG to encompass the area identified by the Service as critical habitat and other GUSG habitats identified in the Gunnison Sage-grouse Rangewide Conservation Plan ([GSRSC, 2005](#)) (refer to [Part 2.1](#) in this Opinion).

### *1.2.5 Incidental Take Exemption & Determination on Effects to Proposed Critical Habitat*

The 2010 Conference Report did not include an estimate of, or exemption for, incidental take of the GUSG. Similarly, no analysis of effects to critical habitat was conveyed by the Service because a designation of critical habitat had not yet been proposed.

Consistent with an agreement between the Service and NRCS, in the event the GUSG is listed, the Service would be committed to adopting an Opinion that exempts take of the GUSG incidental to activities conducted in accordance with the NRCS’ SGI and other NRCS conservation programs and activities consistent with Gunnison sage-grouse conservation outlined in Part 2.4 below.

### *1.2.6 Process/Clarification on Coordination with State Wildlife Agencies*

NRCS and the Service have developed a more specific process for engaging the affected State Wildlife Agencies to ensure consistent implementation of several of the original conservation measures in the 2010 Report. More details are provided in [Appendix 4](#).

## 2.0 DESCRIPTION OF THE PROPOSED ACTION

This Opinion covers activities conducted in accordance with the NRCS conservation programs and activities focused on GUSG conservation outlined in Part 2.4 below. The action for the purposes of this Opinion includes the application of certain conservation practices and CSP enhancements incorporated into NRCS conservation plans and implemented by NRCS clients following the conservation planning process and the conservation measures described in this Opinion.

The scope of NRCS actions addressed in this Opinion includes:

- 1) Implementation and maintenance of all existing GUSG SGI conservation practices, provided all applicable conservation measures have been applied,
- 2) Implementation and maintenance of future GUSG SGI conservation plans within the life of this Opinion,
- 3) Implementation and maintenance of any existing Conservation Technical Assistance (CTA) or Financial Assistance (FA) conservation practices provided by NRCS consistent with the 2010 SGI Report, provided all applicable conservation measures have been applied,
- 4) Implementation and maintenance of any future Conservation Technical Assistance (CTA) or Financial Assistance (FA) conservation plans provided by NRCS consistent with this Opinion provided all applicable conservation measures have been applied.

The duration of the proposed action is 27 years with a review of the program's outcomes and effects at five year intervals. The ESA regulatory determinations are for the 27 years' period.

It is important to note that the proposed action does not involve the following elements:

- ❖ Commercial-scale energy development or associated infrastructure.
- ❖ Conversions of rangeland and other suitable Gunnison Sage Grouse habitat types to land use unsuitable to the species' life history needs.
- ❖ Construction of new public roads or highways.
- ❖ Actions and programs managed by the Farm Service Agency (FSA) as the agency with responsibility for administration of the Conservation Reserve Program (CRP).

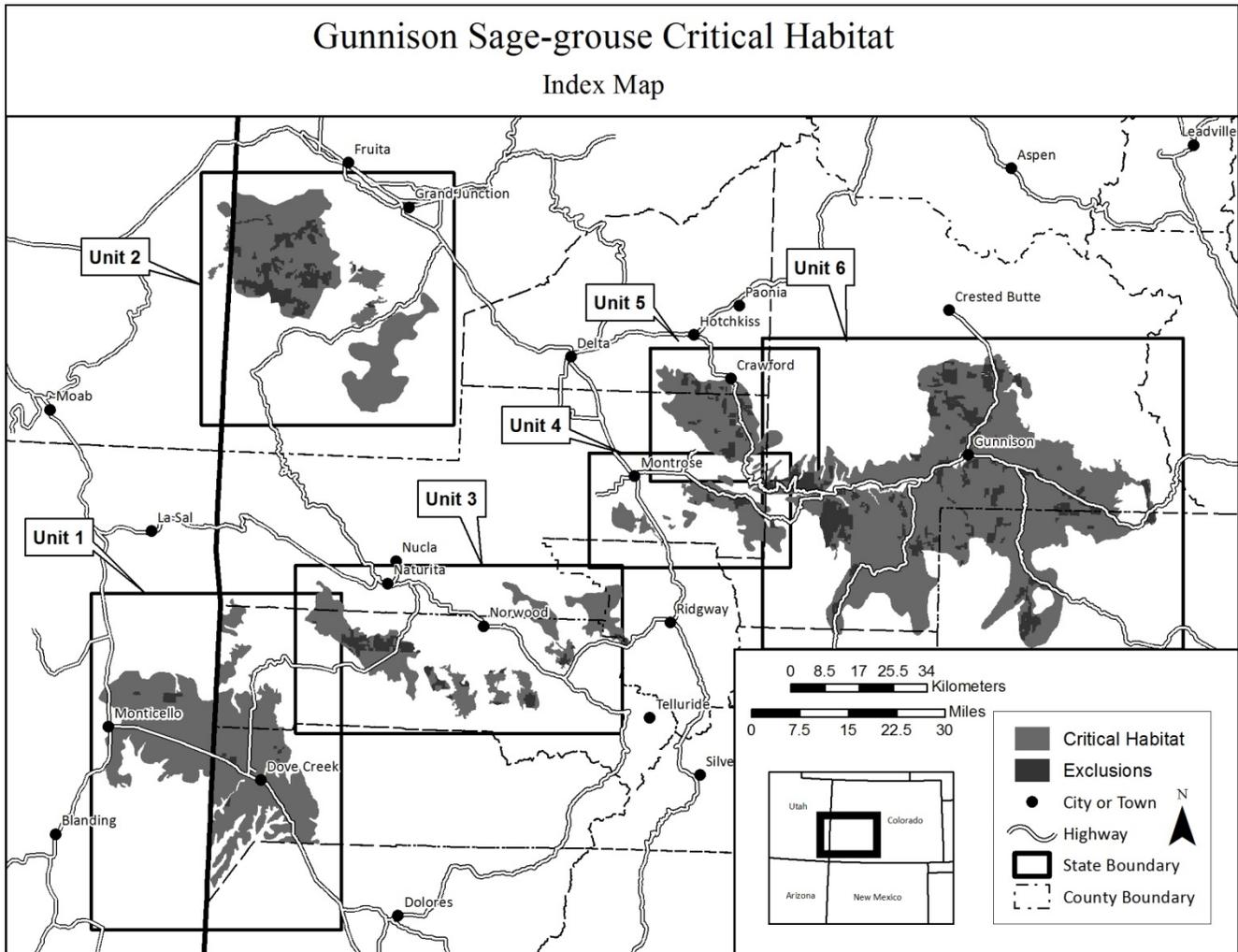
### 2.1 Action Area

The "Action Area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." (50 CFR 402.02). It is the intent of NRCS to

apply the proposed action in all areas where Farm Bill programs can provide conservation to the GUSG. The Action Area encompasses the range of the species, including the area included in the final critical habitat rule on November 20, 2104 ([79 FR 69312](#)). The designed critical habitat includes approximately 1.4 million acres of public and private lands located in Utah and Colorado. Because this area includes public lands, it is important to clarify that this Opinion only covers the actions identified within this consultation. That is, specifically lands within the Action Area where NRCS can provide financial and/or technical assistance in accordance with its legislative authorities such as those contained in the Farm Bill. This may include public lands where an affected private entity has a leased interest.

For the purposes of this document, the species status within its current range is considered the environmental baseline.

A decision flow chart ([Appendix 6](#)) is provided to clarify when and how this Opinion will apply with the above referenced Action Area and in those habitats where occupancy of the GUSG has been documented. Refer to Figure 1 for a map of the Action Area.

**Figure 1. Action Area**

## 2.2 NRCS Conservation Planning Process and the Conservation Plan

NRCS, in accordance with agency regulation and policy, implements a 9-step conservation planning process, as outlined in the NRCS National Planning Procedures Handbook (NRCS 2013a). NRCS conservationists prepare conservation plans in consultation with private participants in order to address environmental resource concerns primarily on private, non-Federal, and tribal lands. NRCS conservationists help individuals and communities take a comprehensive approach to planning the proper use and protection of natural resources on these lands. NRCS balances natural resource issues with economic and social needs through the development of resource management systems (RMS). The expected physical effects of conservation systems and practices are assessed in the context of ecological, economic, and social considerations as documented locally in the Field Office Technical Guide (FOTG). The expected impacts of those effects are then used to help develop and evaluate management alternatives.

The conservation planning process is a three-phase, nine-step process. Although the nine steps are shown in sequence, the process is dynamic and can start with any of the first three steps and some activities may not necessarily occur in a particular planning step each time.

**Phase I - Collection and Analysis (Understanding the Problems and Opportunities)**

1. Identify Problems and Opportunities
2. Determine Objectives
3. Inventory Resources
4. Analyze Resource Data

**Phase II - Decision Support (Understanding the Solutions)**

5. Formulate Alternatives
6. Evaluate Alternatives
7. Make Decisions

**Phase III -Application and Evaluation (Implement Practices and Understanding Results)**

8. Implement the Plan
9. Evaluate the Plan

NRCS also integrates its compliance with other environmental laws within this planning framework, including the ESA.

*2.2.1 WLFW Conservation Planning and the WLFW Conservation Plan*

WLFW Planners

WLFW planners are resource professionals who work with interested participants to develop and implement WLFW conservation plans. WLFW planners are trained to understand the species' needs and the principles to address any limiting factors or threats by working under ESA section 7 consultations. WLFW planners may be NRCS, Service, Partner Biologists or other partner organization field staff (e.g., State wildlife agency, conservation nonprofits, and consultants). The WLFW planner is a separate certification from the NRCS conservation planner certification. This was nationally directed to ensure a high level of quality across a species range.

WLFW Conservation Planning Process

In addition to NRCS' comprehensive approach to planning using a nine-step planning process described in the National Planning Procedures Handbook, the WLFW planners must use habitat evaluation tools (including the Wildlife Habitat Evaluation Guide, applicable Ecological Site Description(s) (ESD), and/or Threats Checklist) approved by the Service. These tools will be used to assess the initial habitat conditions and limiting habitat factors, and the restoration potential for a site. Based on the results of these evaluation tools, the WLFW planner works with the participant to develop and evaluate alternatives to address the identified limiting habitat factors (in order of identified priority) on sites determined to have restoration potential. The resulting conservation plan will include at least one core conservation practice and all conservation practices must follow the conservation measures of this Opinion.

*Overview of WLFW Plan Requirements*

- Developed by a WLFW Planner (Level 1 or 2) and signed by a Level 2 WLFW Planner.

- The habitat evaluation tools (WHEG, ESD, and Threats Checklist) must be completed and incorporated into the planning process for every WLFW conservation plan.
- The WLFW conservation plan must include at least one core practice.
- The WLFW conservation plan must remove or reduce limiting factors(s) in their order of significance, as indicated by the results of the above mentioned habitat evaluation tools (this is a conservation practice standard criteria of the core practices).
- Every practice planned, designed and installed under a WLFW conservation plan or contract must adhere to the conservation measures and conditions identified in this Opinion on the affected job sheet(s).
- The conservation plan and associated job sheets will clearly detail what is required to “maintain” the covered conservation practices and habitat at a suitable level. Suitable habitat is defined using the WHEG/Threats Checklist. It is generally considered the minimum habitat requirements for the species (a WHEG score  $\geq 0.5$ ). This is a crucial distinction to make in order for the participant to maintain ESA predictability after practice implementation.
- The WLFW conservation plan becomes the instrument to convey ESA predictability, as explained in Part 2.4.1(7), after the expiration of any NRCS contract(s) for that participant.

## **2.3 NRCS Conservation Practices**

### *2.3.1 Overview of NRCS Conservation Practices, Standard and Specifications*

NRCS provides technical and financial assistance through the Farm Bill to implement conservation plans based on NRCS conservation practice standards and specifications. These conservation practices are developed through a multi-disciplinary science-based process to maximize the success and minimize the risk of failure of the conservation practice. NRCS conservation practice standards are established at the national level and identify the minimum level of planning, designing, installation, operation, and maintenance required. Each conservation practice standard includes a definition and purpose, identifies conditions in which the conservation practice applies, and includes criteria to support each purpose.

Standards in the NRCS “National Handbook of Conservation Practices” (NRCS 2012) are used and implemented by States, as needed, and may be modified to include additional requirements to meet State or local needs because of wide variations in soils, climate, and topography. Conservation practice standards are routinely reviewed and approved by State Technical Committees to ensure that appropriate criteria are included to cover State-specific interests. State laws and local ordinances or regulations may also dictate more stringent criteria; however in no case are the requirements of the national conservation practice standard to be reduced.

The NRCS State offices within GUSG habitat (Colorado and Utah) will meet the minimal national conservation practice standard agreed to in this Opinion consistently. States may modify national conservation practice standards to provide a higher level of conservation or to provide more detail. A State NRCS office has the option to work with the State Fish and Wildlife Agency and other credible entities to develop criteria that may further detail the manner in which a practice is applied based on the best available science.

### 2.3.2 NRCS Conservation Practices & CSP Enhancements Evaluated and Conditioned (Covered Practices)

NRCS conservation practices incorporated into NRCS conservation plans and implemented by NRCS clients, create the circumstances by which potential adverse and/or beneficial effects to the covered species can be assessed.

Therefore, the evaluation and conditioning of the conservation practice is essential to achieve the expected conservation outcomes, provide regulatory determinations on effects, and provide incidental take exemption for any adverse effects to the covered species that cannot be avoided.

In the 2010 Conference Report, there were forty (40) NRCS conservation practices evaluated and determined by the Service as potentially having an effect to sage-grouse. These practices were conditioned, through the Report, by the development of practice-specific conservation measures; to minimize or eliminate detrimental effects of the practice to sage-grouse or their habitat. These conditioned conservation practices that are ‘covered’ under the Report, were carried-over into the Opinion and evaluated as part of the proposed action. The Opinion covers an additional six (6) conservation practices; two practices had merged, resulting in the Opinion covering forty-five (45) practices ([Table 1](#)). Refer to Part 1.2.1 for a full listing of changes.

Covered Conservation Practice includes:

1. Primary (core) land management practices intended to benefit the GUSG and its habitat;
2. Practices that facilitate the application of the primary (core) land management practices that, in themselves, may or may not be beneficial to GUSG and its habitat; and
3. Practice-specific conservation measures (the conditioning) that minimize or eliminate detrimental effects of conservation practices to GUSG and its habitat.

**Table 1. – NRCS Conservation Practices Covered in the Opinion**

		<b>LIMITED USE</b> (see Section 4.3, AE #9 for a definition)	
<b>Conservation Practice Name</b>	<b>Practice Number</b>	<b>Conservation Practice Name</b>	<b>Practice Number</b>
Access Control	472	Access Road	560
Brush Management-Conifer Removal	314	Brush Management-Non-conifer Removal	314
Prescribed Grazing ( <b>CORE</b> )	528	Diversion	362
Conservation Cover	327	Grazing Land Mechanical Treatment	548
Pumping Plant	533	Heavy Use Area Protection	561
Conservation Crop Rotation	328	Irrigation Field Ditch Irrigation System	388
Cover Crop	340	Irrigation System, Micro Irrigation	441
Critical Area Planting	342	Irrigation System, Sprinkler	442
Fence	382	Irrigation System, Surface & Subsurface	443
Firebreak	394	Irrigation Water Conveyance-Pipeline	430
Structure for Wildlife	649	Pond	378
Forage Harvest Management	511	Prescribed Burning	338
Forage& Biomass Planting	512	Stream Crossing	578

Herbaceous Weed Control	315	Structure for Water Control	587
Irrigation Water Management	449	Tree/Shrub Establishment	612
Livestock Pipeline	516	Water & Sediment Control	638
Obstruction Removal	500	Windbreak/Shelterbelt Establishment	380
Rangeland Planting	550		
Grade Stabilization Structure	410		
Restoration/Mgt. Rare/Declining Habitat	643		
Riparian Herbaceous Cover	390		
Road/Trail/Landing Closure & Treatment	654		
Spring Development	574		
Upland Wildlife Habitat Management ( <b>CORE</b> )	645		
Water Well	642		
Watering Facility	614		
Wetland Wildlife Habitat Management	644		
Woody Residue Treatment	384		

### CSP Enhancement Activities

In addition to above conservation practices, NRCS utilizes Enhancement Activities through the NRCS Conservation Stewardship Program (CSP). Enhancement Activities are similar to conservation practices in that they are used to treat natural resources and improve conservation performance. However, they are installed at a level of management intensity that *exceeds* the sustainable level for a given resource concern, and those directly related to a conservation practice standard are applied in a manner that *exceeds* the minimum treatment requirements of the standard.

There are several Enhancement Activities directly related to the covered conservation practices. Those Enhancement Activities identified were given the same level of evaluation and conditioning, and will have the same requirements, as their corresponding covered practices (including the requirement to follow the conservation measures) as summarized in Table 2. Table 2 lists the covered CSP Enhancement Activities (by code) and their corresponding conservation practices.

NRCS Easement Activities: NRCS easement programs may be used for sage-grouse habitat preservation. All restoration and management activities performed as part of an easement in suitable sage-grouse habitat will utilize NRCS practices, with associated specification including conservation measures and operations and maintenance details.

### **2.4 NRCS Programs and Activities Focused on Gunnison Sage-Grouse Conservation**

NRCS has worked collaboratively at a national, state and local level with the Service and other partners to develop special efforts or initiatives that focus NRCS' financial and technical resources towards addressing relevant threats to targeted declining species. Across the Nation, seven wildlife species were selected for these efforts; they were determined to be species whose decline could be reversed and where efforts would benefit other species with similar habitat needs. The Gunnison sage-grouse and associated greater sage-grouse were collectively selected as one of the seven targeted species. Provided below is a summary of the primary NRCS initiatives/efforts that provide conservation of the GUSG:

#### Working Lands for Wildlife Partnership

The Working Lands for Wildlife (WLFW) Partnership was established on March 8, 2012, when the Secretaries of Agriculture and Interior jointly announced a voluntary, incentive-based effort to provide private and Tribal participants with technical and financial assistance to: (1) to restore populations of declining wildlife species; (2) provide farmers, ranchers, and forest managers with regulatory predictability that conservation investments they make today help sustain their operations over the long term; (3) strengthen and sustain rural economies by restoring and protecting the productive capacity of working lands. For more information on the Working Lands for Wildlife, please visit: <http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?&cid=stelprdb1046975>

#### NRCS Sage-Grouse Initiative

The Sage Grouse Initiative (SGI) is a collaborative, targeted effort to implement conservation practices to improve range condition in core sage-grouse population areas that benefit sage-grouse habitat quality and alleviate threats, while improving the sustainability of working ranches. The SGI encompasses all States that have sage-grouse populations: California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming. The primary goal of SGI is to implement appropriate conservation actions at scales sufficient to influence a positive population response in areas that contain large concentrations of sage-grouse and where threats to sage-grouse can be effectively addressed through NRCS administered conservation programs. For more information on the Sage Grouse Initiative, please visit: <http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/initiatives/?cid=steldevb1027671>

The SGI was the prototype for the WLFW and they are functionally equivalent for purposes of the proposed action and this consultation. These terms are used interchangeably throughout the document.

#### *2.4.1 Implementation of NRCS Programs and Activities for Gunnison Sage-Grouse*

The implementation of NRCS programs and activities under the SGI/WLFW involves the following seven (7) elements:

(1) A Landscape and Targeted Focus.

These efforts are structured to facilitate landscape-level improvements across the species' range while recognizing that threats and opportunities differ among ecological zones and within identified high priority areas called focal or core areas. These focal/core areas are the same as the identified Action Area (Map 1).

(2) Use of Selected Conservation Practices & CSP Enhancements.

To ensure that the conservation outcomes are met, NRCS and the Service worked together to identify the conservation practices necessary and appropriate for the effort. Those selected practices and CSP enhancements for GUSG conservation are covered by the Opinion; see Part 2.3.1 (Tables 1 & 2).

If practices that are not covered in this Opinion are planned to be implemented within the Action Area, then the planner will need to determine if there will be an effect on the GUSG or its habitat based on NRCS's NEPA and ESA policy (H\_190\_NECH Part 610).

All conservation plans developed for participants in the WLFW/SGI are required to have primary land management practices (referred to as core practices) intended to benefit the GUSG and its habitat. The core practices include Upland Wildlife Habitat Management (645) and Prescribed Grazing (528), when

livestock are present. Implementation under practice 645 is essential because this core practice ensures that all other practices are implemented specifically to benefit GUSG populations and their habitats. This eliminates the possibility of using practices that benefit producers but not GUSG. The 645 practice standard requires a habitat evaluation to be conducted and limiting factors removed or reduced in their order of significance (see Part 2.4.1.(4), below). The purpose of the practice is to treat upland wildlife habitat concerns identified during the conservation planning process to provide shelter, cover, and food in proper amounts, locations and times to sustain GUSG during all phases of its life cycle, or enable movement. The identification of the species' limiting factors at the individual property owner level is essential to ensure that the goals are being met under the WLFW/SGI.

Implementation of Prescribed Grazing (528) is essential because this core practice will be used to prescribe grazing plans designed to A) improve overall rangeland health, B) be sustainable on the landscape, C) have no more than 50% forage utilization during winter grazing, and D) be monitored so informed adjustments can be made, when necessary. Site-specific management plans will be developed with each participant; these plans will detail the stocking rates, rotations, timing, and duration of use in each field. All grazing plans will contain a drought contingency that adjusts grazing use commensurate with lower precipitation and plant growth.

During the planning phase, NRCS will conduct a detailed inventory of known GUSG lek sites, roads, and associated infrastructure (i.e., fences, watering tanks, etc.) to develop the site-specific grazing systems. All required facilitating practices (i.e., fence, well, spring development, pipeline, etc.) will be planned and designed to minimize disturbance and, to enhance GUSG habitat through the installation and maintenance of a sustainable livestock management program.

### (3) Incorporation of Conservation Measures.

The Service and NRCS jointly identified and developed conservation measures to reduce or eliminate potentially adverse effects to the GUSG that may result from the implementation of conservation practices and CSP Enhancement covered in the Opinion. This is also referenced as practice conditioning. Conservation measures for each covered conservation practice are provided in Appendix 3. Table 2 provides a listing of those conservation measures included for each of the CSP Enhancements as well.

Every practice designed and installed under a WLFW/SGI Gunnison sage-grouse conservation plan or contract will adhere to this Opinion's conservation measures identified for that practice/CSP Enhancement.

### Additional conservation benefits relating to coordination with State Wildlife Agencies

As part of the proposed action and since the 2010 SGI Conference Report, the NRCS has worked collaboratively with the State of Colorado and State of Utah in establishing additional interpretations and implementation of several of the original conservation measures whereby state wildlife agency expertise, advice, and information is sought. Specifically for the covered conservation practice standards, NRCS has agreed to coordinate with the affected State Wildlife Agency(ies) to identify appropriate restrictions, as appropriate, on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur. Part 4.1 of the Opinion and [Appendix 4](#) provides additional information on the overall Service guidance of the expected outcomes of this state level coordination process.

(4) Application of the Best Science to Support Desired Habitat Conditions.

To support effective application of each of the conservation practices, NRCS collaboratively developed a Wildlife Habitat Evaluation Guide (WHEG) for the Gunnison sage-grouse; using the best science available ([Appendix 5](#)). WHEGs are tools that are developed at the NRCS state level, and used by field personnel to assess existing habitat conditions, identify limiting habitat factors in the planning area, and to determine the restoration potential for a site. They are similar to Habitat Suitability Index Models (See the Service's Ecological Services Manual, Habitat as a Basis for Environmental Assessment, 1980). The identification of the species' limiting factors at the individual property owner level is essential to ensure that the goals are being met under the WLFW/SGI by guiding the selection and implementation of the selected conservation practice standards.

The composition and technical standards within the WHEG may change over the 27-year life of the consultation as new information becomes available. The WHEG will be updated as appropriate using the annual meeting identified on page 51 below. It will not constitute a re-initiation of proposed action. (See the Re-initiation Notice section.)

Based on the results of the WHEG, the planner works with the client to develop and evaluate alternatives to address the identified limiting habitat factors (in order of identified priority). A conservation plan that includes conservation practices and conservation measures to address identified limitations is then developed with the participant.

The WHEG will also be used to help determine the expected condition of habitat after the implemented conservation practices have reached maturity or as a monitoring tool to assess that habitat condition after implementation (See 2.4.1(5) below).

The value of the both the WHEG and the applied conservation practice standards as conditioned herein are to maintain, restore, and/or enhance habitat conditions suitable to the persistence and improvement in the GUSG. The structure and composition of suitable habitat is more expressly defined at various scales and for various life history components as summarized in the Service's critical habitat rule (79 FR 69312) and beginning on page 46 of this document. Maintaining suitable habitat also features into maintaining eligibility for the ESA regulatory predictability discussed in 2.4.1.(7) below.

(5) Provides a Science Supported, Monitoring and Assessment Element.

At a landscape scale, the sage-grouse monitoring and evaluation component of SGI measures the response of sage-grouse populations and associated vital rates in order to gauge effectiveness and provide an adaptive management framework to program delivery. This effort is provided through SGI, where NRCS has retained a science advisor to ensure that the science support elements are implemented in a technically sound manner and monitoring efforts are scientifically valid. The science advisor will help design studies, implement field-based assessments, and shepherd rigorous science through the peer-review process for publication in leading scientific journals. The advisor will also act as a point of contact for reporting of short- and long-term results.

At a local level, in addition to the monitoring and assessment requirements that are standard to NRCS' conservation planning procedures (Appendix 1), these efforts will include project specific monitoring for the duration of the participants involvement in WLFW/SGI. This will include completion of a WHEG during the planning and evaluation phase to develop a baseline of habitat conditions and to identify limiting factors that need to be addressed. The WHEG will be completed again within 5 years

of the projects' completion and at periodic intervals over the project life to either confirm that the habitat benefits to the GUSG have been met, or that additional actions should be planned to the objectives. This will also help inform both NRCS and Service as to the efficacy of the practices, conservation measures, and the long term conservation outcomes of the SGI/WLFW as part of the periodic review process.

More specific details and elements will be developed over time using the annual meeting outlined in the Reasonable and Prudent Measures section below (page 51).

(6) Provides Staff and Partnership Training and Involvement.

Conservation planning for the WLFW/SGI is conducted by designated WLFW planners; resource professionals trained to understand the habitat needs and threats, and the Section 7 consultation requirements for the species (i.e. the GUSG Opinion). They can be NRCS, Service, or other partner organization field staff (e.g., State wildlife agency, conservation nonprofits, and consultants). It is up to individual States to determine specific staff to fulfill the WLFW implementation needs and the amount of training required to successfully plan for identified WLFW priority species habitat.

At a minimum, NRCS and the Service agree to meet annually to discuss the implementation of the proposed action and as outlined in the NRCS' Biological Assessment for the Proposed Action and explained in the Reasonable and Prudent Measures section below (page 51).

(7) ESA Predictability and Working Lands for Wildlife

The WLFW/SGI is a collaborative partnership between the Service and NRCS that strategically targets technical and financial assistance to improve habitat for declining species while also offering predictability (up to 30 years) for participating producers who continue to implement their conservation practices and associated conservation measures according to their conservation plan.

WLFW/SGI is a practice-based approach versus a programmatic approach to conservation. Participant predictability and conservation measures apply regardless of the NRCS program funding. A key component of this partnership is the cooperative development of programmatic consultation documents (Conference Reports, Conference Opinions, Biological Opinions and other consultation documents) under Section 7 of the ESA, in which the Service and NRCS evaluate the effects of implementing certain conservation practices and associated conservation measures designed to produce long-term benefits for the species and their habitats, while helping to sustain healthy working lands.

Consistent with an agreement between the Service and NRCS, described in an exchange of letters in August, 2012 (Appendix 2), the Service has prepared this Biological Opinion for NRCS under Section 7 of the ESA. If adopted as a Biological Opinion, this will exempt any incidental take associated with implementing the specified conservation practices and measures included in each conservation plan. Recognizing that continued implementation of the conservation practices by participating producers beyond the term of the NRCS contract would advance the longer-term goals of WLFW and both agencies missions; the Service is evaluating the effects of implementing the specified practices over a 27-year period. Producers who choose to use or maintain the conservation practices and associated conservation measures included in the WLFW conservation plan will have the predictability of knowing that ESA issues associated with their implementation of the specified conservation practices for up to 27 years have already been addressed. NRCS had developed a protocol to track participation in the WLFW and will be providing this information as a component of its annual report. Ongoing as well as new WLFW accomplishments are bundled and reported to the Service annually.

The ESA predictability under WLFW/SGI requires adherence to the requirements and eligibility outlined herein.

The predictability offered will protect the participant from incidental take (if the species is listed) resulting from the installation and maintenance of the practices for up to 27 years. A permit is not directly issued to the participant; the participant is covered through the WLFW agreement between the Service and NRCS. The offered predictability is attached to the land and is transferrable to any future owners as long as they continue to maintain the covered conservation practice standards, incorporated conservation measures and as outlined in the conservation plan. Predictability is offered immediately upon practice implementation. Predictability for the Gunnison sage-grouse is provided by this Opinion.

### **3.0 STATUS OF THE SPECIES AND ENVIRONMENTAL BASELINE**

#### **3.1 Status of the Species**

On November 20, 2014, the Service determined that protection under the Endangered Species Act (ESA) is warranted for the Gunnison sage-grouse, and has finalized a rule to list the species as threatened (79 FR 69192). We have also designated critical habitat on 1,429,551 acres in southwestern Colorado and southeastern Utah (79 FR 69312). Following is a summary of the current distribution of the species' rangewide and an assessment of the Gunnison Basin population and trends. More detail on the species status is provided in aforementioned Federal Register notices. A detailed discussion of Gunnison sage-grouse taxonomy, the species description, historical distribution, habitat, and life-history characteristics can be found in the Service's 12-month finding for Gunnison sage-grouse, published September 28, 2010 (75 FR 59804).

Gunnison sage-grouse currently occur in seven widely scattered and isolated populations in Colorado and Utah, occupying 3,795 square kilometers (km<sup>2</sup>) (1,511 square miles [mi<sup>2</sup>]) (Gunnison Sage-grouse Rangewide Steering Committee) [GSRSC] 2005, pp. 36–37; CDOW 2009a, p. 1). The seven populations are Gunnison Basin, San Miguel Basin, Monticello–Dove Creek, Piñon Mesa, Crawford, Cerro Summit–Cimarron–Sims Mesa, and Poncha Pass (Figure 1). Population trends over the last 12 years indicate that six of the populations are in declining trend, with a few increasing recently, possibly due to recent translocation efforts. The largest population, the Gunnison Basin population, while showing variation over the years, has been relatively stable through the period (CDOW 2010, p. 2; CPW 2012, pp.1-4). Six of the populations are very small and fragmented (all with less than 40,500 hectares (ha) (100,000 acres [ac]) of habitat likely used by grouse and, with the exception of the San Miguel population, less than 50 males counted on leks (communal breeding areas)) (CDOW 2009, p. 5; CPW 2012, p. 3). The San Miguel population is the second largest and comprises six fragmented subpopulations. For population trend graphs, see Figures 2 and 3, page 55 and 56.

#### **3.2 Environmental Baseline**

Given that this Opinion covers all habitats occupied by GUSG (i.e., range-wide), the environmental baseline for this Opinion is equivalent to the current status of the species (see 3.1 above) within the

action area (see 2.1 above). NRCS SGI activities addressed in the 2010 SGI Conference Report are included in the environmental baseline.

### **3.3 NRCS' GUSG Accomplishments**

To date, all NRCS projects implemented within GUSG habitat have been in compliance with the conservation measures found in the Report, as applicable. Within the Action Area, 555 acres of Brush Management (NRCS Practice 314) and 250 acres of Range Planting (NRCS Practice 550) have been applied as a result of SGI contracts with eligible private participants. Additionally, there are 4,151 acres of Upland Wildlife Habitat Management (645), 204 acres of Brush Management (314), 23,500 feet of Obstruction Removal (500) and one Spring Development (574) planned under SGI contracts. In addition to the SGI contracts, there have been Prescribed Grazing Plans (NRCS Practice 528) written on 65,670 acres of range-land within the Action Area.

## **4.0 EFFECTS OF THE ACTION**

The effects of the action include the direct and indirect impacts of the proposed Federal action on the species and critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR 402.02).

We have evaluated the identified conservation practice standards in the context of how the individual standards have the potential to produce beneficial and adverse effects to the GUSG. The Service worked in collaboration with the NRCS to develop specific conservation measures for the forty-five (45) conservation practice standards and twenty-two (22) CSP Enhancements included in the proposed action. [Table 1](#) lists each of the covered conservation practices. Table 2 lists each of the covered CSP Enhancements and corresponding conservation measures(s).

The Service believes that, as implemented, the conservation measures will result in ameliorating, minimizing, or eliminating potential adverse effects. However, even with the implementation of the conservation measures, some remaining adverse effects are anticipated to the GUSG.

Each conservation practice standard will be designed to work synergistically with other conservation practice standards under a conservation management system to achieve the purposes of the Upland Wildlife Habitat Management practice (645), which serves as the core management practice for participants. This linkage between conservation practice standards produces benefits and minimizes adverse effects to the species. In some cases, application of several conservation practice standards at the local or landscape scale will produce benefits while simultaneously creating a potential temporary source of risk to individual birds. For example, a mechanized vegetative treatment designed to produce better brood habitat (such as for the removal of encroaching juniper) is likely to result in a positive population response by GUSG over the long-term, despite the potential for some level of temporary disturbance to the bird from the methods used.

### **4.1 Description of Conservation Practice Standards**

Appendix 3 provides a comprehensive analysis of each covered conservation practice standard. (By reference to Table 2, this analysis also extends to the covered CSP enhancements.) The analysis describes their specific definition, purpose, and resource concerns. Resource concerns do not describe adverse or beneficial effects of implementing the practice; instead they describe the environmental

limiting factor(s) which the conservation practice standards are designed to address as it is relevant to its implementation within the NRCS Farm Bill programs and activities focused on GUSG conservation.

[Appendix 4](#) provides additional information on the process upon which NRCS will engage the local affected State wildlife agencies associated with implementation of Conservation Measures CM1 and CM2 (see [Table 1](#)) for conservation practices addressed in this Opinion. Specific performance requirements are contained in that process. The Service prefers that NRCS coordinate with the state wildlife agencies and seek their guidance in preparing conservation plans, which was the original intent of the 2010 SGI Conference Report. In the absence of state coordination, a participant wishing to be involved in SGI coordination and incidental take exemptions should use the following performance standards ((A), (B), and (C) repeated below from [Appendix 4](#)) as the default protection standards for project planning in Gunnison sage-grouse habitat (understanding that they will not necessarily be applicable or relevant in all situations).

The specific performance requirements are:

- (A) Avoiding fence and road construction, and other surface disturbance (mechanized vegetation treatment, removal, modification, or damage) within 0.6 mile of active leks;
- (B) Avoiding surface disturbances (mechanized vegetation treatment, removal, modification, or damage) within 4.0 miles of active leks from March 1 through July 15; and
- (C) Sagebrush communities shall be maintained within 0.25 miles of known summer-fall habitat (e.g., riparian, wet meadows, or irrigated agricultural fields). Treatment of sagebrush in these areas is not discouraged but shall be designed to maintain and/or enhance the primary constituent elements (PCE) of Gunnison sage-grouse habitat as outlined in the final critical habitat rule (79 FR 69312) and as further explained and identified below.

NOTE 1: If the specific performance detailed above cannot be implemented or are not feasible for a particular project or property, NRCS will engage in further coordination with the State agency biologists and/or the Service to identify and apply avoidance and minimization measures sufficient to ensure that the suitability and functionality of leks are maintained and ensure that impacts on birds and seasonal habitats are avoided or minimized. Vegetation composition, structure, and spatial configuration that, collectively, comprise Gunnison sage-grouse habitats will be considered in these evaluations.

NOTE 2: The dates in (B) above are based on those found in state conservation plans for greater sage-grouse: Colorado Greater Sage-Grouse Conservation Plan (CGSSC, 2008, Appendix B), Conservation Plan for Greater Sage-grouse in Utah (February 14, 2013), and the Gunnison sage-grouse Rangewide Conservation Plan (RCP) (GSRSC, 2005, Appendix I). The RCP for GUSG is silent on project activity timing restrictions during early brood-rearing. The dates below are extended both earlier and later to account for warmer, lower elevation (< 7000 ft.) areas, along with cooler, higher elevation areas (> 9000 ft.) within the GUSG range.

## 4.2 Description of CSP Enhancements

The Conservation Stewardship Program (CSP) helps agricultural producers maintain and improve their existing conservation systems and adopt additional conservation activities to address priority resources concerns. The intent of CSP is to provide incentives to achieve the highest level of conservation. NRCS is preparing to offer SGI CSP for the first time 2015. SGI CSP will provide the participants financial incentives and planning assistance to maintain the highest possible quality of sage-grouse habitat on their land as well as the ability to address all outstanding threats to sage-grouse.

As with conservation practice standards, only a subset of enhancements is being selected for SGI CSP. The selected enhancements were chosen due to their potential to improve sage-grouse habitat and address threats to sage-grouse. In addition to the use of the existing enhancements, several new enhancements have been created with sage-grouse conservation in mind. Enhancements can be amended at the NRCS state-level to ensure high levels of conservation and to provide more state-specific details. SGI conservation measures and other state-specific criteria will be incorporated into the enhancements at the state level. ESA predictability can be conveyed through enhancements, as long as the actions and conservation measures are maintained at a level which provides quality sage-grouse habitat.

Only selected NRCS CSP enhancements can be used for SGI (see Table 2). All general CSP enhancements can be viewed at:

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/csp/?cid=stelprdb1240690>. State and SGI-specific versions of the enhancements will be available on each state's Field Office Technical Guide (FOTG) at <http://efotg.sc.egov.usda.gov/>.

The potential adverse effects to GUSG from implementation and management of the CSP Enhancements can be determined by the referencing the associated conservation practices (see Table 2). Although the enhancements are designed to achieve high levels of conservation, there are still potential for short-term negative effects during implementation. By implementing the appropriate conservation measures, these negative effects can be avoided or minimized.

**Table 2:** CSP Enhancements, Related Conservation Practice Standards & Associated Conservation Measures

Enhancement Name	Enhancement Code	Associated SGI Practices (code) (See <a href="#">Table 1</a> ; Appendix 3 for descriptions)	Conservation Measures <sup>+</sup>
Extending Riparian Forest Buffers for Water Quality Enhancement and Wildlife Habitat	ANM05	314, 315, 327, 384, 512, 528, 612, 645	1, 2, 3, 4, 5, 8, 9, 10
Extend Existing Field Borders for Water Quality Enhancement and Wildlife Habitat	ANM07	314, 315, 327, 342, 384, 390, 500, 528, 612, 645	1, 2, 3, 4, 5, 8, 9, 10
Grazing Management to Improve Wildlife Habitat	ANM09	512, 528, 550, 645	1, 2, 3, 10
Harvest Hay in a Manner That Allows Wildlife to Flush and Escape	ANM10	511, 645	6
Prairie Restoration for Grazing and Wildlife Habitat	ANM21	314, 315, 327, 342, 384, 500, 528, 550, 645	1, 2, 3, 4, 5, 10
Multi-Species Native Perennials for Biomass/Wildlife Habitat	ANM23	315, 327, 342, 390, 500, 528, 645	1, 2, 3, 4, 10
Wildlife Friendly Fencing	ANM27	382, 528, 645, 649	1, 2, 3, 4, 6, 8, 10

Extend Existing Filter Strips or Riparian Herbaceous Cover for Water Quality Enhancement and Wildlife Habitat	ANM32	314, 315, 327, 342, 390, 500, 528, 645	1, 2, 3, 4, 5, 10
Riparian Forest Buffer, Terrestrial and Aquatic Wildlife Habitat	ANM33	314, 315, 327, 384, 512, 528, 612, 645	1, 2, 3, 4, 5, 10
Enhance Wildlife Habitat on Expired Grass/Legume Covered CRP Acres or Acres with Similar Perennial Vegetated Cover Managed as Hayland	ANM35	315, 327, 342, 390, 511, 550, 645	1, 2, 3, 4, 6, 10
Retrofit Watering Facility for Wildlife Escape and to Enhance Access for Bats and Bird Species	ANM38	528, 614, 645, 649	1, 2, 3, 4, 7, 10
Removal of All Threats to Sensitive Wildlife Species on Operation	ANM57	Potentially All	Potentially All <sup>#</sup>
Reduction of Attractants to Human-Subsidized Predators in Sensitive Wildlife Species Habitat	ANM58	500, 643, 645	1, 2, 3, 10
Monitoring Key Grazing Areas to Improve Grazing Management	PLT02	528, 645	10
Establish Pollinator and/or Beneficial Insect Habitat	PLT15	315, 327, 342, 380, 390, 512, 550, 645	1, 2, 3, 4, 9, 10
High Residue Cover Crops or Mixtures of High Residue Cover Crops for Weed Suppression and Soil Health	PLT20	328, 340, 645	1, 6
Conversion of Cropped Land to Grass-Based Forage Agriculture	SQL09	315, 327, 512, 528, 550, 645	1, 2, 3, 4, 10
Biological Suppression and Other Non-Chemical Techniques to Manage Brush, Herbaceous Weeds and Invasive Species	WQL01	314, 315, 384, 528, 645	1, 2, 3, 4, 5, 10
Rotation of Supplement Feeding Areas	WQL03	528, 645	10
High Level Integrated Pest Management to Reduce Pesticide Environmental Risk	WQL13	645	None
<sup>+</sup> - Conservation measures will apply based on the use of associated practices. Not all practices will correspond with an enhancement in all situations. <sup>#</sup> - To be assigned at the NRCS state-level by referencing conservation measures from the associated SGI-approved practice(s) needed to remove the threat(s).			

### 4.3 Effects Analysis by Adverse Effect (AE)

When Conservation Practices are installed or applied to the land, short-term and long-term positive and/or negative effects may occur. The Service and NRCS identified ten potential adverse effects that may result from implementation of the conservation practice standards. To address the adverse effects identified, the Service, in cooperation with NRCS, developed specific conservation measures which are designed to minimize, avoid, or eliminate these adverse effects. The particular adverse effect and the associated conservation measures are described in Table 3 below.

Sources of adverse effects, conservation challenges, and other information pertinent to the effects of the proposed action are primarily derived from literature and scientific information summarized in the aforementioned Federal Register notices.

#### AE 1. Physical disturbance (including noise).

The installation of most of the covered conservation practices will produce some level of physical disturbance and noise related effects - because most involve the physical presence of humans and their equipment, vehicles, or machinery in the GUSG's habitat. Further, future periodic disturbances have

the potential to be created as maintenance actions of the implemented practices may be needed over their operational life.

Although the relationship and effect are not quantitatively known, the literature suggests that some form of physical effects from presence and/or associated noise will create a disturbance response to individual birds (78 FR 2486; 78 FR 2540). Effects from road development and use; recreational motorized equipment; and infrastructure associated with energy development have been documented in the literature. Although the Service concludes that the level, duration, and intensity of the effects of this nature from the aforementioned land use are far greater than the sources of effect from the type of actions envisioned in the proposed action (e.g., agricultural and ranching operations), this information has some relevance to the discussion and is presented herein.

As outlined in (78 FR 2486; 78 FR 2540), a landscape-scale spatial model predicting Gunnison sage grouse nest site selection showed strong avoidance of areas with high road densities of roads classed 1 through 4 (primary paved highways through primitive roads with 2-wheel drive sedan clearance) within 6.4 km (4 mi) of nest sites (Aldridge et al. 2011). Nest sites also decreased with increased proximity to primary and secondary paved highways (roads classes 1 and 2) (Aldridge et al. 2011). Male greater sage-grouse lek attendance was shown to decline within 3 km (1.9 mi) of a methane well or haul road with traffic volume exceeding one vehicle per day (Holloran 2005). Male sage grouse depend on acoustical signals to attract females to leks (Gibson and Bradbury 1985; Gratson 1993). If noise from roads interferes with mating displays, and thereby female attendance, younger males will not be drawn to the lek and eventually leks will become inactive (Amstrup and Phillips 1977; Braun 1986). In a study on the Pinedale Anticline in Wyoming, greater sage-grouse hens that bred on leks within 3 km (1.9 mi) of roads associated with oil and gas development traveled twice as far to nest as did hens that bred on leks greater than 3 km (1.9 mi) from roads. Nest initiation rates for hens bred on leks close to roads also were lower (65 versus 89 percent), affecting population recruitment (33 versus 44 percent) (Lyon 2000; Lyon and Anderson 2003).

In context with the type and character of the vehicular traffic implicit in the proposed action, the Service does not believe that significant adverse effects from the use of farm and/or ranch equipment deployed to implement the covered conservation practice standards will occur. The likelihood of risk to the species from these sources of disturbance is remote and site-specific; most of this disturbance will be localized to the immediate area where the work is occurring and is expected to be of limited duration and temporary in nature. Specifically, the Service believes that in certain and limited situations the equipment and types of disturbances anticipated under the proposed action will elicit a flushing/escape response from affected GUSG and therefore may place individual birds at greater risk to predation when they leave sagebrush cover. If the equipment and actions are occurring close to occupied nests, the female may abandon the nest for some indeterminate period or permanently. Further, it is possible some adults, nests, and/or eggs may be lost due to collisions from equipment (this is discussed further below).

The net effect of the physical disturbance including sustained sources of noise may be a localized reduction of survival or productivity, avoidance of otherwise suitable habitat, and/or reduction of breeding frequency. Although the adverse effect of noise is amplified if it is of significant volume or duration during the mating displays of males on leks, the Service does not anticipate these to be

significant due to the nature and character of the equipment implementing the covered conservation practice standards and the types of land uses (agricultural) involved in the proposed action.

The Service is primarily concerned with physical disturbance due to mechanized equipment involved in habitat manipulation actions during the time the species is using leks and during the critical nesting and brood rearing seasons. Considerations of buffers and/or timing restrictions are warranted as daytime movements of adult male Greater sage-grouse (GRSG) during the breeding season do not vary greatly. Wallestad and Schladweiler (1974) found daily movements ranged between 0.2 and 0.8 miles from leks, with a maximum cruising radius of 0.9 to 1.2 miles. Ellis et al. (1987) reported that dispersal flights of male GRSG (to day-use areas) ranged from 0.3 to 0.5 miles, with the longest flights ranging from 1.2 to 1.3 miles. Carr (1967) reported that the cruising radius of male GRSG ranged from 0.9 to 1.1 miles. Rothenmaier (1979) found that 60 to 80% of male GRSG locations were within 0.6 to 0.7 miles of a lek. Emmons (1980) reported that male dispersal distances to day-use areas of 0.1 miles were common and that 67% of all use areas were greater than 0.3 miles from the lek. In addition, Schoenber (1982) found that male daily movements averaged 0.6 miles, but ranged from 0.02 to 1.5 miles. While no similar data are available for GUSG, the Service believes this information is applicable to the species due to similar life histories.

Habitat data from GUSG movement and nesting studies indicate 85.2 percent of all GUSG nests and 81.3 percent of all GUSG breeding and summer-fall seasonal locations are within 4.0 miles of the lek of capture (NPS unpublished data, Young 1994, Apa 2004).

Conservation measures were developed specifically to reduce the frequency, severity, and/or duration of this adverse effect during the species use of leks and the larger window of time for the species to complete nesting and brood rearing. As a consequence, the Service expects reduction of the extent and magnitude of this conservation issue will occur through the expected and substantial involvement from local field level experts in implementation of this conservation measure, including State Wildlife Agency personnel and other invited experts. This coordination process is further discussed in [Appendix 4](#).

The presence of livestock may also create physical disturbance to GUSG. Adverse consequences of grazing include livestock trampling of grouse nests. Nest destruction has been documented and the presence of livestock can cause sage-grouse to abandon their nests (summarized in 78 FR 2486 and 78 FR 2540). Disturbance of some individual grouse may occasionally occur from feeding, calving, and herding of livestock. However, these effects are not expected to produce significant changes in species distribution and abundance.

Cumulatively, the Service anticipates adverse effects from livestock grazing disturbances and anthropogenic sources of disturbance associated with routine livestock management activities of the proposed action will be infrequent, specific in a narrow set of circumstances, localized and/or otherwise temporary.

Given that the focus of the WLFW/SGI is to restore and improve GUSG habitat, the long term and cumulative benefits of installation and application of the particular Conservation Practice Standards as conditioned by the conservation measures are expected to off-set the temporary expected adverse effects created from physical disturbance during their installation.

**AE 2. Temporary soil and vegetation disturbance and  
AE 3. Increased potential of introduction of invasive plants.**

For purposes of this analysis, the Service is combining these two conservation issues into a single discussion of their potential adverse effects. Sources of the disturbance would include use of equipment (post-hole diggers, tractors, and other machinery) associated with the placement and maintenance of infrastructure (e.g., fences, irrigation, fixed structures etc); as well as practices that involve the planting or manipulation of vegetation (such as Conservation Cover (code 327), Brush Management (code 314) and Riparian Herbaceous Cover (code 390)). Temporary soil and vegetation disturbance is expected from the installation of most of the conservation practice standards. This disturbance may further increase the potential for invasive plants. The second conservation issue of concern potentially producing these adverse effects is livestock management actions, including grazing-related issues.

Invasive plants negatively impact GUSG primarily by reducing or eliminating native vegetation that sage-grouse require for food and cover, resulting in habitat loss and fragmentation (78 FR 2486; 78 FR 2540). Although invasive plants, especially cheatgrass, have affected some Gunnison sage-grouse habitat, the impacts do not currently appear to be threatening individual populations or the species rangewide. However, invasive plants continue to expand their range, facilitated by ground disturbances such as fire, grazing, and human infrastructure. Climate change will likely alter the range of individual invasive species, increasing fragmentation and habitat loss of sagebrush communities. Even with treatments, given the history of invasive plants on the landscape, and our continued inability to control such species, invasive plants will persist and will likely continue to spread throughout the range of the species indefinitely. Therefore, invasive plants and associated increased fire risk will be on the landscape indefinitely. Although currently not a major threat to the persistence of Gunnison sage-grouse at the species level, the Service anticipates invasive species to become an increasing threat to the species in the future, particularly when considered in conjunction with future climate projections and potential changes in sagebrush plant community composition and dynamics (78 FR 2486; 78 FR 2540).

The conservation practice standards analyzed by the Service that could produce this potential adverse effect will be deployed by NRCS to conduct restoration and enhancement actions for sagebrush habitat after any practice causing soil disturbances and/or vegetation disturbances. Further, within the design and application of the affected conservation practice standards, NRCS has specific criteria and objectives which manage the risk for invasive plants. For restoration actions, conservation measures requiring planting and management of native plant species appropriate to the ecological site will be used to provide a temporary buffer in the establishment of native vegetation. With the use of the conservation measures, coupled with the relatively small area of disturbances created by the WLFW/SGI collectively across the landscape, the Service believes that these two conservation issues can be adequately managed as they relate to temporary habitat disturbances associated with equipment and infrastructure. Given that the focus of the WLFW/SGI is to restore and improve GUSG habitat, the long term and cumulative benefits of installation and application of the particular Conservation Practice Standards as conditioned by the conservation measures are expected to exceed the temporary expected adverse effects created from their installation.

Some of the covered practices will apply habitat management/treatments to provide long term benefits. While we expect these long term benefits, some short term adverse consequences from temporary loss of habitat/habitat functions may occur. Conservation measures were developed to specifically to reduce the frequency, severity, and/or duration of this adverse effect during the species use of leks and the larger window of time for the species to complete nesting and brood rearing. As a consequence, the Service expects reduction of the extent and magnitude of this conservation issue will occur through the expected and substantial involvement from local field level experts in implementation of this conservation measure, including State Wildlife Agency personnel and other invited experts. This coordination process is further discussed in [Appendix 4](#).

The remaining primary sources of risk from temporary disturbances to GUSG vegetative structure via the proposed action are those potential effects from livestock grazing.

Sage-grouse need significant grass and shrub cover for protection from predators, particularly during nesting season and females will preferentially choose nesting sites based on these qualities (Hagen et al. 2007; 78 FR 2486; 78 FR 2540). In particular, nest success in Gunnison sage-grouse habitat is related to greater grass and forb heights and shrub density (Young 1994). The reduction of grass heights due to livestock grazing in sage-grouse nesting and brood-rearing areas has been shown to negatively affect nesting success when cover is reduced below the 18 cm (7 in.) needed for predator avoidance (Gregg et al. 1994). Based on measurements of cattle foraging rates on bunchgrasses both between and under sagebrush canopies, the probability of foraging on under-canopy bunchgrasses depends on sagebrush size and shape. Consequently, the effects of grazing on nesting habitats might be site specific (France et al. 2008). Grazing by livestock could reduce the suitability of breeding and brood-rearing habitat, negatively affecting sage-grouse populations (Braun 1987; Dobkin 1995; Connelly and Braun 1997; Beck and Mitchell 2000). Domestic livestock grazing reduces water infiltration rates and the cover of herbaceous plants and litter, compacts the soil, and increases soil erosion (Braun 1998; Dobkin et al. 1998). These impacts change the proportion of shrub, grass, and forb components in the affected area, and facilitate invasion of exotic plant species that do not provide suitable habitat for sage-grouse (Mack and Thompson 1982; Miller and Eddleman 2000; Knick et al. 2011).

Further, as reported in (78 FR 2486 and 78 FR 2540), livestock grazing may have positive effects on sage-grouse under some habitat conditions. Sage-grouse use grazed meadows significantly more during late summer than un-grazed meadows because grazing had stimulated the regrowth of forbs (Evans 1986). Greater sage-grouse sought out and used openings in meadows created by cattle grazing in northern Nevada (Klebenow 1981). Also, both sheep and goats have been used to control invasive weeds (Mosley 1996 in Connelly et al. 2004; Merritt et al. 2001; Olsen and Wallander 2001) and woody plant encroachment (Riggs and Urness 1989) in sage-grouse habitat.

Although livestock grazing and associated land treatments have likely altered plant composition, increased topsoil loss, and increased spread of exotic plants, the impacts on Gunnison sage-grouse populations are not clear. Few studies have directly addressed the effect of livestock grazing on sage-grouse (Beck and Mitchell 2000; Wamboldt et al. 2002; Crawford et al. 2004), and little direct experimental evidence links grazing practices to Gunnison sage-grouse population levels (Braun 1987; Connelly and Braun 1997). Rowland (2004) conducted a literature review and found no experimental research that demonstrates grazing alone is responsible for reduction in sage-grouse numbers.

Conservation measures, as well as the design of the proposed action, will be used to effectively manage livestock related effects to GUSG habitat. The primary requirement will be that all conservation plans developed under the proposed action will include Upland Wildlife Habitat Management (645) as the core conservation practice, and add Prescribed Grazing (528) when livestock are present. Implementation under 645 is essential because this core practice ensures that all other practices are implemented specifically to benefit sage-grouse populations and their habitats. This eliminates the possibility of using practices that benefit producers but not the species. The 645 practice standard requires habitat to be evaluated using a Wildlife Habitat Evaluation Guide (WHEG) and limiting factors (threats) to be removed or reduced in order of significance (see below). The purpose of the practice is to treat upland wildlife habitat concerns identified during the conservation planning process to provide shelter, cover, and food in proper amounts, locations, and times to sustain sage-grouse during all phases of its life cycle, or enable movement. The identification of the species' limiting factors at the individual property owner level is essential to ensure that the goals are being met under the proposed action. Implementation of Prescribed Grazing (528) is essential because this core practice determines which, if any, facilitating conservation practices are needed to ensure that sage-grouse habitat is maintained or improved and is also used to determine the extent, location, and timing of grazing-related facilitating practices.

To support effective application of each of the conservation practices, NRCS collaboratively developed Wildlife Habitat Evaluation Guide (WHEG) in both mesic and xeric habitat for the GUSG; using the best science available ([Appendix 5](#)). WHEGs are tools developed at the NRCS state level and used by field personnel to assess existing habitat conditions, to identify limiting habitat factors in the planning area, and to determine the restoration potential for a site. Based on the results of the WHEG, the NRCS planner works with the client to develop and evaluate alternatives to address the identified limiting habitat factors (in order of identified priority). A conservation plan that includes specific conservation practices and conservation measures to address identified limitations is then developed with the participant.

The expected result of the application of the above design features, incorporated into the Conservation Measures specific to livestock grazing, will be to produce grazing management systems compatible with the needs of the species and where applicable, restore the species' habitat needs using this management tool. Given that the focus of the WLFW/SGI is to restore and improve GUSG habitat, the long term and cumulative benefits of installation of these grazing management systems are expected to exceed the temporary expected adverse effects created from their installation.

#### **AE 4. Removal of sage brush and understory component.**

This adverse effect is for permanent removal of either sagebrush or the understory (forb, grasses) components. It is specific to a vegetative loss directly from the installation of the conservation practice standard or the expectation that, once implemented, permanent degradation of habitat conditions for the GUSG will have resulted. Many of the facilitating conservation practice standards (such as Woody Residue Treatment (code 384), and Firebreak (code 394)) covered in this Opinion have the potential to result in the permanent removal of sagebrush and/or understory components.

The primary conservation concern to the Service is loss of sagebrush and its associated understory vegetation which leads to a reduction of available habitat and subsequent decline in GUSG populations. The Service believes that maintaining large areas of suitable habitat with appropriate connectivity is essential to sage-grouse persistence (summarized in 78 FR 2486; 78 FR 2540). For purposes of our analysis, NRCS is not proposing to facilitate the loss of natural sage brush habitats through direct conversion to agricultural lands. Consequently, loss of habitat and increases in rate/extent of habitat fragmentation as a result of implementation of the proposed action are not expected to increase or occur at the scale necessary to adversely impact population trends.

Most of the structural practices will produce localized losses which can be minimized using the identified recommended conservation measure(s). The conservation measure(s) focus on design and planning aspects of the practice so as to avoid large expanses of habitat loss - especially from linear practices (e.g., fence lines, access road, etc). Where the removal of sagebrush vegetation and associated understory is the objective of a limited use practice in support of the goals of the WLFW/SGI (such as brush management, grazing lands mechanical treatment, and prescribed burning, etc), conservation measures were developed to specifically to reduce the frequency, severity, and/or duration of this adverse effect during the species use of leks and the larger window of time for the species to complete nesting and brood rearing. As a consequence, the Service expects reduction of the extent and magnitude of this conservation issue will occur through the expected and substantial involvement from local field level experts in implementation of this conservation measure, including State Wildlife Agency personnel and other invited experts. This coordination process is further discussed in [Appendix 4](#).

The potential effects of grazing-related actions are summarized above for temporary habitat effects. The Service expects these consequences and sources of risk to be relevant and germane for this category of Adverse Effect. Similarly, we conclude that the application of the conservation measures specific to managing the effects of grazing will produce similar overall cumulative benefits as well.

Collectively, the loss of habitat under the conservation practices implemented as described in the proposed action, applying the conservation measures, is not expected to occur at a scale which would adversely impact population trends or create habitat fragmentations.

#### **AE 5. Increased Fire Hazard.**

Mountain big sagebrush, the most important and widespread sagebrush species for Gunnison sage-grouse, is killed by fire and can require decades to recover. In nesting and wintering sites, fire causes direct loss of habitat due to reduced cover and forage (Call and Maser 1985). While there may be limited instances where burned habitat is beneficial, these gains are lost if alternative sagebrush habitat is not readily available (Woodward 2006). Little alternative habitat is available for Gunnison sage-grouse, so beneficial effects of fire are highly unlikely (summarized in 78 FR 2486).

Herbaceous understory vegetation plays a critical role throughout the breeding season as a source of forage and cover for GUSG females and chicks. The response of herbaceous understory vegetation to fire varies with differences in species composition, pre-burn site condition, fire intensity, and pre- and post-fire patterns of precipitation. In general, when not considering the synergistic effects of invasive species, any beneficial short-term flush of understory grasses and forbs is lost after only a few years

and little difference is apparent between burned and unburned sites (Cook et al. 1994; Fischer et al. 1996a; Crawford 1999; Wroblewski 1999; Nelle et al. 2000; Paysen et al. 2000; Wambolt et al. 2001). In addition to altering plant community structure through shrub removal and potential weed invasion, fires can influence invertebrate food sources (Schroeder et al. 1999). However, because few studies have been conducted and the results of those available vary, the specific magnitude and duration of the effects of fire on insect communities is still uncertain.

The invasion of the exotic annual grass cheatgrass increases fire frequency within the sagebrush ecosystem (Zouhar et al. 2008; Miller et al. 2011). Cheatgrass readily invades sagebrush communities, especially disturbed sites, and changes historical fire patterns by providing an abundant and easily ignitable fuel source that facilitates fire spread. While sagebrush is killed by fire and is slow to reestablish, cheatgrass recovers within 1 to 2 years of a fire event (Young and Evans 1978). This annual recovery leads to a readily burnable fuel source and ultimately a reoccurring fire cycle that prevents sagebrush reestablishment (Eiswerth et al. 2009). The extensive distribution and highly invasive nature of cheatgrass poses substantial increased risk of fire and permanent loss of sagebrush habitat, as areas disturbed by fire are highly susceptible to further invasion and ultimately habitat conversion to an altered community state. For example, Link et al. (2006) show that risk of fire increases from approximately 46 to 100 percent when ground cover of cheatgrass increases from 12 to 45 percent or more. We do not have a reliable estimate of the amount of area occupied by cheatgrass in the range of Gunnison sage-grouse. However, cheatgrass is found at numerous locations throughout the Gunnison Basin (BLM 2009).

A clear positive response of Gunnison or greater sage-grouse to fire has not been demonstrated (Braun 1998). The few studies that have suggested fire may be beneficial for greater sage-grouse were primarily conducted in mesic areas used for brood-rearing (Klebenow 1970; Pyle and Crawford 1996; Gates 1983, in Connelly et al. 2000c; Sime 1991, in Connelly et al. 2000a). In this type of habitat, small fires may maintain a suitable habitat mosaic by reducing shrub encroachment and encouraging understory growth. However, without available nearby sagebrush cover, the utility of these sites is questionable, especially within the six small Gunnison sage-grouse populations where fire could further degrade and fragment the remaining habitat.

Woody Residue Treatment (code 384) has the potential to create this conservation concern. The specific adverse effects of the installation of this practice is focused on managing the conditions after or during practice implementation that are conducive to introducing or spreading invasive plants following wild fires. The other primary issue of concern to the Service is specific to the management of woody slash created after a using Brush Management (code 314) to control pinyon-juniper invasion in some parts of the species' range. While the evidence of the effectiveness of managing pinyon-juniper encroachment is not yet established for GUSG, both NRCS and the Service believe it has conservation value to the species and is an integral component of the GUSG conservation efforts in specific situations. Management of pinyon-juniper has a direct benefit to Greater sage-grouse (NRCS 2014).

The conservation practice standards that are implemented under the purposes of the WLFW/SGI are likely to minimize the risk of increased fire hazard due to their inherent design features and application, and by following the recommended conservation measure for this concern (the management of woody slash piles should significantly reduce build-up of fuels and by following state forestry laws governing management of slash). At the landscape scale for this particular conservation

practice standards the identified management controls are expected to reduce the extent and magnitude of creating increased hazards for uncontrolled and/or unnatural fire regimes in sagebrush.

#### **AE 6. Collision, drowning, or equipment strike related mortality to individual sage-grouse**

Several conservation practice standards (Watering Facility, Forage Harvest Management, Cover Crop, and Conservation Crop Rotation, and Fencing) were identified as potentially causing mortality or injury to individual birds. These include accidental mortality from drowning in livestock water tanks, getting hit by equipment, or striking a fence.

The use of specific conservation measures focusing on design, timing, and method of operation of machinery and the placement and management of water features (such as the use of escape ramps and individual site selection for proper placement) is expected to significantly reduce the potential adverse effects of these conservation practice standards.

The effects of fencing are of special consideration here. The effects of fencing on sage-grouse include direct mortality through collisions, creation of raptor and corvid perch sites, the potential creation of predator corridors along fences (particularly if a road is maintained next to the fence), incursion of exotic species along the fencing corridor, and habitat fragmentation (Call and Maser 1985; Braun 1998; Connelly et al. 2000a; Beck et al. 2003; Knick et al. 2003; Connelly et al. 2004). Sage-grouse frequently fly low and fast across sagebrush flats, and fences can create a collision hazard resulting in direct mortality (Call and Maser 1985; Christiansen 2009). Not all fences present the same mortality risk to sage-grouse. Mortality risk appears to be dependent on a combination of factors including design of fencing, landscape topography, and spatial relationship with seasonal habitats (Christiansen 2009). This variability in fence mortality rate and the lack of systematic fence monitoring make it difficult to determine the magnitude of direct strike mortality impacts to sage-grouse populations; however, in some cases the level of mortality is likely significant to localized areas within populations. Greater sage-grouse fence collisions during the breeding season in Idaho were found to be relatively common and widespread, with collisions being influenced by the technical attributes of the fences, fence length and density, topography, and distance to nearest active sage-grouse lek (Stevens 2011). We assume that Gunnison sage-grouse are also killed by fences but do not have species-specific data. Although the effects of direct strike mortality on populations are not fully analyzed, fences are generally ubiquitous across the landscape.

Fence posts create perching places for raptors and corvids, which may increase their ability to prey on sage-grouse (Braun 1998; Oyler-McCance et al. 2001; Connelly et al. 2004). This is particularly significant for sage-grouse reproduction because corvids were responsible for more than 50 percent of nest predations in Nevada (Coates 2007). Greater sage grouse avoidance of habitat adjacent to fences, presumably to minimize the risk of predation, effectively results in habitat fragmentation even if the actual habitat is not removed (Braun 1998). Because of similarities in behavior and habitat use, the response of Gunnison sage-grouse should be similar to that observed in greater sage-grouse.

Recent science has found that fence markers can reduce collisions by up to 83 percent for GRSG (Stevens et al. 2012). Further, GRSG are most at risk of striking fences close to leks: 73% of strikes were within 0.3 miles of a lek, and 93% were within 0.93 miles. Further, data suggest that most GRSG

collisions occurs where the terrain was flat or gently rolling. With this new information in hand, NRCS developed a mapping tool to help land managers prioritize sites where sage grouse are most at risk of colliding with fences. The Fence Collision Risk Tool resulted from a GIS (Geographic Information Systems)-based model of strike risk around 4,684 known leks (summarized in NRCS 2013b). The mapping to date for GRSG reveals that only a tiny fraction of GRSG range (6 to 14 percent) potentially poses a high risk for collisions and would need markers or other modification if fences are present (NRCS 2012; Stevens et al. 2013).

For the proposed action, the principle technique for minimizing the adverse effects of fencing is to ensure that planning and design placement of new fences provides at least a 0.6 mile buffer from occupied and historic leks<sup>1)</sup>, unless the state fish and wildlife agency recommends a different buffer. If this is not possible, a requirement to mark the fence to increase visibility will be implemented by NRCS. NRCS will identify existing fences that are within 0.6 mile of an occupied or historic lek<sup>1)</sup> and consider removing or relocating the fence to a site further from the lek. NRCS will require marking all existing fences within 0.6 mile from an occupied or historic lek, or in areas where collisions are known to occur.

Cumulatively, the use of the recommended conservation measures are expected to provide a net positive conservation outcome to the species, particularly in light of the positive synergism created through removal of existing fences in essential habitat features such as leks, the installation of escape ramps, and modifications of the installations of the other affected conservation practice standards.

<sup>1)</sup> **occupied and historic leks<sup>1)</sup> is defined an open area where 1 or more Gunnison sage-grouse have been observed on more than 1 occasion, engaging in courtship or breeding behavior in the last 10 years.**

#### **AE 7. Increased potential for introduction of disease (West Nile virus or WNV).**

To date, West Nile virus has not been documented in Gunnison sage-grouse despite the presence of West Nile virus-positive mosquitoes in nearly all counties throughout their range (Colorado Department of Public Health 2009; U. S. Centers for Disease Control and Prevention 2004). We do not know whether this is a result of the small number of birds that are marked, the relatively few birds that exist in the wild or unsuitable conditions in Gunnison sage-grouse habitat for the virus to become virulent. West Nile virus activity within the range of Gunnison sage-grouse has been low compared to other parts of Colorado and the western United States. A total of 77 wild bird (other than Gunnison sage-grouse) deaths resulting from West Nile virus has been confirmed from counties within the occupied range of Gunnison sage-grouse since 2002 when reporting began in Colorado (USGS 2013). Fifty-two (68 percent) of these West Nile virus-caused bird deaths were reported from Mesa County (where the Piñon Mesa population is found). Only San Miguel, Dolores, and Hinsdale Counties had no confirmed avian mortalities resulting from West Nile virus.

Walker and Naugle (2011) predict that West Nile virus outbreaks in small, isolated, and genetically depauperate populations could reduce sage-grouse numbers below a threshold from which recovery is unlikely because of limited or nonexistent demographic and genetic exchange from adjacent populations. Thus, a West Nile virus outbreak in any Gunnison sage-grouse population, except perhaps the Gunnison Basin population, could limit the persistence of these populations.

The implementation of the conservation measure will require site-specific assessments of the risk of introducing WNV as a result of creating an open water source (such as for livestock watering). State wildlife agency personnel are expected to play a central role in advising NRCS on timing, construction, and placement. Cumulatively, the Service believes that the conservation measures will effectively reduce the risk of this conservation concern at the local and landscape scale.

#### **AE 8. Increased potential for predation.**

Gunnison sage-grouse may be increasingly subject to levels of predation that would not normally occur in the historically contiguous unaltered sagebrush habitats. Gunnison sage-grouse are adapted to minimize predation by cryptic plumage and behavior, however, predation has a strong relationship with anthropogenic factors on the landscape, and human presence on the landscape will continue to increase. The impacts of predation on greater sage-grouse can increase where habitat quality has been compromised by anthropogenic activities (exurban development, road development, etc.) (e.g. Coates 2007; Bui 2009; Hagen 2011). Landscape fragmentation, habitat degradation, and human populations have the potential to increase predator populations through increasing ease of securing prey and subsidizing food sources and nest or den substrate. Thus, otherwise suitable habitat may change into a habitat sink (habitat in which reproduction is insufficient to balance mortality) for grouse populations (Aldridge and Boyce 2007).

Anthropogenic influences on sagebrush habitats that increase suitability for ravens may also limit sage-grouse populations (Bui 2009). Current land-use practices in the intermountain West favor high predator (in particular, raven) abundance relative to historical numbers (Coates et al. 2008). The interaction between changes in habitat and predation may have substantial effects to sage-grouse at the landscape level (Coates 2007). Since the Gunnison and greater sage-grouse have such similar behavior and life-history traits, we believe the current impacts on Gunnison sage-grouse are at least as significant as those documented to date in greater sage-grouse. Given the small population sizes and fragmented nature of the remaining Gunnison sage-grouse habitat, we believe that the impacts of predation will likely be even greater as habitat fragmentation increases.

The studies presented above for greater sage-grouse suggest that, in areas of intensive habitat alteration and fragmentation, sage-grouse productivity and, therefore, populations could be negatively affected by increasing predation. As more habitats face development, even dispersed development such as that occurring throughout the range of Gunnison sage-grouse, we expect this threat to spread and increase. Therefore, the best available information shows that predation is currently a threat to the Gunnison sage-grouse and will continue to be a threat to the species. This threat is further summarized 78 FR 2486.

Certain conservation practice standards may increase the potential for predation on individual birds through the installation of structures or modifying existing habitat conditions. The facilitating conservation practice standards involved with the creation or maintenance of infrastructure or habitat manipulations associated with ranching operations are often affected. The identified conservation measure suggests modifications to the design of fences, management of brush piles, and avoiding the use of tall structures in the species' habitat to the extent possible and practicable. Cumulatively, the Service believes that the conservation measures will effectively reduce the risk of this conservation concern at the local and landscape scale.

**AE 9. Practice is considered to be of "limited use".**

As a reoccurring point in our analysis of effects, the development of site specific conservation measures is critical to manage, reduce, or eliminate the potential adverse effects that may result from the implementation of the conservation practice standards. The Service and NRCS agree that there are conservation practice standards that have potentially conflicting purposes, or have a very specific purpose within the framework of the WLFW/SGI that can only be effectively evaluated and executed at the participant scale. Collectively identified as "limited use" practices, they include the following seventeen (17) practices: Diversion (code 362), Heavy Use Area Protection (code 561), Structure for Water Control (code 587), Stream Crossing (code 578), Tree/Shrub Establishment (code 612), Water & Sediment Control (code 638), Windbreak/Shelterbelt Establishment (code 380); Access Road (code 560); Brush Management (non-conifer) (code 314), Grazing Land Mechanical Treatment (code 548), Prescribed Burning (code 338), Pond (code 378), and all of the irrigation system practices (codes 388, 441, 442, 443, 430).

"Limited use" practices are also by definition practices that NRCS has indicated to the Service will only be used in specific and special circumstances to address some limiting factor for GUSG conservation as identified in the core Upland Wildlife Habitat Management (645) Conservation Practice Standard.

Application of any limited use practice will be closely coordinated as needed with State Wildlife Agency personnel and other invited parties as explained in [Appendix 4](#). The required conservation measures for any particular design features to minimize or ameliorate anticipated adverse effect will reflect at a minimum, the standards outlined in [Appendix 4](#). A State Wildlife Agency, or NRCS, may conclude and require – more expansive – protective measures are appropriate.

Conservation measures were developed to specifically to reduce the frequency, severity, and/or duration of the potential adverse effects from these limited use practices during the species use of leks and the larger window of time for the species to complete nesting and brood rearing. As a consequence, the Service expects reduction of the extent and magnitude of this conservation issue will occur through the expected and substantial involvement from local field level experts in implementation of this conservation measure, including State Wildlife Agency personnel and other invited experts. This coordination process is further discussed in [Appendix 4](#).

**AE 10. Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs can result in a reduction of GUSG habitat quality.**

As with the explanation and analysis of the potential for adverse effects as outlined previously for AE1 thru AE9, the Services' analysis recognizes the interdependence and interplay between the individual conservation practice standards and how they will produce specific results within the goals and structure of the core practices of Upland Wildlife Habitat Management (code 645) and Prescribed Grazing (code 528), when livestock are present. As a component of developing and implementing individual conservation plans, the NRCS will work the affected participant and design and apply the desired conservation practice standards to produce a ranch/farm management plan that is compatible

with the GUSG. However, not all practices will be implemented simultaneously; rather these will be phased in over time.

This specific adverse effect (consequence) was highlighted as it acknowledges the inherent complexities and nuances involved in establishing robust conservation planning, addressing participant concerns, and achieving the GUSG habitat needs - all within the context of achieving the purposes of the WLFW/SGI at both the individual plan and cumulatively within the proposed action.

**4.4 Incorporation of Conservation Measures**

The Service and NRCS jointly identified and developed conservation measures to reduce or eliminate (the above identified) potentially adverse effects to the GUSG that may result from the implementation of conservation practices covered in the Opinion. This is also referenced as practice conditioning.

The Service concludes that the selected conservation measures will significantly reduce the potential direct, indirect and cumulative adverse effects from the proposed actions because:

- First and foremost, spatial and temporal restrictions will be required for grazing systems and the structural practices involving the use of equipment, installation of ranch infrastructure, soil disturbance, and/or construction actions during the important nesting and brood rearing seasons of the species. These measures will cumulatively reduce the risk to the species at the times upon which it is aggregated for breeding and when females are close to lek sites sitting on nests, incubating eggs, and rearing young.
- Practice application and design (including but not limited to infrastructure placement, livestock management systems and other habitat management practices) will place priority on developing and maintaining the habitat and life history requirements of the species.
- No significant permanent loss of habitat is expected or foreseen with implementation of the proposed action.
- Every practice designed and installed under a WLFW/SGI conservation plan or contract will adhere to this Opinion’s conservation measures identified for that practice.
- For all conservation measures where the specific details are to be coordinated with the responsible State Wildlife Agency; if the responsible State Wildlife Agency chooses not to provide the recommendations, then the NRCS will utilize the specifications set forth in [Appendix 4](#) or will coordinate further with the Service to obtain those specific details.

Table 3 provides a summary of the ten identified adverse effects and the associated conservation measures. Conservation measures for each covered conservation practices/CSP Enhancements are provided in Appendix 3 and the additional state wildlife agency coordination process is provided in [Appendix 4](#).

Based on those recommendations and consultations, the NRCS will develop a consolidated table outlining state imposed restrictions. This will be formally distributed to NRCS employees in both Colorado and Utah as well as to the Service as an orientation and training feature of this Opinion.

**Table 3. Potential Adverse Effects and Associated Conservation Measures**

<b>Potential adverse effects (AE) to the</b>	<b>Conservation Measure (CM)</b> recommended to ameliorate, minimize or abate the potential adverse effects
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<p>species as a result of the conservation practice standard</p>	<p>PLANNING: should be incorporated into the NRCS planning process by selecting the appropriate practices                  IMPLEMENTATION: should be incorporated into the specification sheets</p>
<p>AE 1: Physical disturbance (including noise) of birds</p>	<p>CM 1:</p> <ul style="list-style-type: none"> <li>a) PLANNING: NRCS shall coordinate with Colorado Parks and Wildlife (CPW) or Utah Division of Wildlife (UDWR) to identify appropriate restrictions on the:                         <ul style="list-style-type: none"> <li>i. placement,</li> <li>ii. extent,</li> <li>iii. configuration, and</li> <li>iv. timing of conservation practice standards (see b. below) and</li> <li>v. the area where these practice restrictions would apply so as to avoid or minimize physical disturbance to sage-grouse where they may occur.</li> </ul> <p>For example, state wildlife agency may recommend that certain activities will not be allowed such as placement of practices that cause physical disturbance within prescribed distances of leks. <i>DWR recommends against any permanent disturbance within one mile of a lek.</i></p> </li> <li>b) PLANNING &amp; IMPLEMENTATION: Time of day restrictions on activities around leks from March 1 to May 31 from two hours before sunrise to two hours after sunset, and general restrictions on disturbance in nesting and brood rearing habitat from April 1 to July 15, and winter habitat from November 15 through February 28.</li> </ul>
<p>AE 2: Temporary soil and vegetation disturbances</p>	<p>CM 2:</p> <ul style="list-style-type: none"> <li>a) PLANNING: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Following the evaluation of local site conditions, site-specific Ecological Site Descriptions and the specific needs of the sage-grouse will be used to inform the reclamation strategy.</li> <li>b) PLANNING &amp; IMPLEMENTATION: Minimize soil and vegetative disturbances during installation of conservation practices. <i>Use existing roads and disturbed areas for staging where feasible.</i></li> <li>c) IMPLEMENTATION: During installation, utilize soil erosion protection measures if potential for off-site soil erosion exists.</li> <li>d) PLANNING: Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by sage-grouse as well as those plants that reflect the potential of the specific ecological site to optimize sage-grouse habitat. <i>When it is necessary to use non-native species, they should provide the same community function as the native species would have filled (see Table: Recommended Plant Species for Sage Grouse below).</i></li> <li>e) PLANNING: Tree species should not be planted. <i>(Note: Willow species may be necessary in some instances to create and stabilize wet meadow and riparian communities.)</i></li> <li>f) PLANNING: When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive <i>(see NRCS Utah Invasive Species List)</i>.</li> <li>g) IMPLEMENTATION: All seed mixes should be State-certified weed free.</li> <li>h) PLANNING: Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or DWR recommendations. <i>Fall or winter seeding is recommended to provide necessary seed stratification and to take advantage of favorable moisture conditions.</i></li> <li>i) IMPLEMENTATION: Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.</li> <li>j) PLANNING: Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment. <i>The principal immediate post-treatment management objective should be to provide for maximum establishment and development of the seeded species. As a general rule, treated and seeded sites should not be grazed until at least the end of the second growing season following seeding.</i></li> </ul>

<p>AE 3: Increased potential for invasive plants</p>	<p>CM 3:</p> <ul style="list-style-type: none"> <li>a) PLANNING: Evaluate the site's potential for invasion by undesirable plants during practice planning and design. Following the evaluation of local site conditions, site-specific Ecological Site Descriptions and the specific needs of the sage-grouse will be used to inform the reclamation strategy.</li> <li>b) PLANNING &amp; IMPLEMENTATION: Minimize soil and vegetative disturbances during implementation of conservation practices. <i>Use existing roads and disturbed areas for staging where feasible.</i></li> <li>c) PLANNING: Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by sage-grouse as well as those species that reflect the potential of the specific ecological site to optimize sage-grouse habitat. <i>When it is necessary to use non-native species, they should provide the same community function as the native species would have filled (see Table: Recommended Plant Species for Sage Grouse below).</i></li> <li>d) PLANNING: Tree species should not be planted. <i>(Note: Willow species may be necessary in some instances to create and stabilize wet meadow and riparian communities.)</i></li> <li>e) PLANNING: When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive.</li> <li>f) IMPLEMENTATION: All seed mixes should be State-certified weed free (see NRCS Utah Invasive Species List).</li> <li>g) PLANNING: Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or DWR recommendations. <i>Fall or winter seeding is recommended to provide necessary seed stratification and to take advantage of favorable moisture conditions.</i></li> <li>h) IMPLEMENTATION: Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.</li> <li>i) PLANNING: Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment. <i>The principal immediate post-treatment management objective should be to provide for maximum establishment and development of the seeded species. As a general rule, treated and seeded sties should not be grazed until at least the end of the second growing season following seeding.</i></li> </ul>
<p>AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard</p>	<p>CM 4:</p> <ul style="list-style-type: none"> <li>a) PLANNING &amp; IMPLEMENTATION: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. <i>Smash or mow vegetation instead of blading where feasible.</i></li> <li>b) IMPLEMENTATION: For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle.</li> <li>c) IMPLEMENTATION: If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width.</li> <li>d) PLANNING: NRCS shall coordinate with CPW or UDWR to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective (brush management, grazing land mechanical treatment, and prescribed burning).</li> </ul>
<p>AE 5: Increased fire hazard</p>	<p>CM 5:</p> <ul style="list-style-type: none"> <li>a) PLANNING: Woody slash shall be treated if significant buildup of fuels occurs (typically in phase II and III juniper treatments).</li> <li>b) PLANNING: Slash piles shall be burned when wildfire risk is low (usually when soils are frozen or saturated). Follow state forestry laws, when applicable, for treating slash to minimize wildfire risk. <i>Consult with Colorado State Forest Service or Utah Department of Forestry, Fire, and State Lands and local jurisdictions for burn permits.</i></li> </ul>

<p>AE 6: Accidental mortality to individual sage-grouse</p>	<p>CM 6:</p> <ul style="list-style-type: none"> <li>a) PLANNING: Plan and design placement of new fences away from occupied and historic leks. If this is not possible, NRCS will require that fences be adequately marked to increase visibility.</li> <li>b) PLANNING: Identify existing fences that are nearby to an occupied or historic lek and consider removing or relocating the fence to a site further from the lek.</li> <li>c) PLANNING: NRCS will require, at a minimum, marking all existing fences within 0.6 mile from an occupied or historic lek, or in areas where collisions are known to occur.</li> <li>d) PLANNING: Use escape ramps in all new and existing water facilities that occur in sage-grouse habitat.</li> <li>e) PLANNING &amp; IMPLEMENTATION: For haying operations, employee techniques to avoid or minimize mortality, such as flush bars, slower speeds and harvesting patterns that herd wildlife out of the hayland (e.g., from center to outside of field).</li> </ul>
<p>AE 7: Increased potential for West Nile virus</p>	<p>CM 7:</p> <ul style="list-style-type: none"> <li>a) PLANNING: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the DWR and design practice to minimize or eliminate the threat of West Nile virus to the species. <ul style="list-style-type: none"> <li>i. <i>Potential for increasing West Nile virus disease vectors should be carefully examined before adding new water developments, especially developments with standing water. Benefits of increased mesic brood rearing habitat (forbs, grasses and insects) associated with the creation of an open water source may outweigh the risks of West Nile virus.</i></li> </ul> </li> </ul>
<p>AE 8: Increased potential for predation</p>	<p>CM 8:</p> <ul style="list-style-type: none"> <li>a) IMPLEMENTATION: Minimize to the extent possible the removal of existing vegetation when installing practice.</li> <li>b) PLANNING &amp; IMPLEMENTATION: Whenever possible when installing fence, use T-posts or cones on posts to reduce perching opportunities for avian predators.</li> <li>c) IMPLEMENTATION: Avoid leaving trash or brush piles that could provide cover for predator species.</li> <li>d) PLANNING: Powerlines should be buried whenever possible or use solar systems to supply required power needs.</li> <li>e) PLANNING: Consider the possibility of increased habitat suitability for ravens and other predators resulting from water developments when placing water developments within sage-grouse range. Wildlife watering facilities should not be installed for sage-grouse.</li> <li>f) PLANNING: Tree species should not be planted. (<i>Note: Willow species may be necessary in some instances to create and stabilize wet meadow and riparian communities.</i>)</li> </ul>
<p>AE 9: Practice is considered to be of "limited use" for sage-grouse</p>	<p>CM 9:</p> <ul style="list-style-type: none"> <li>a) PLANNING &amp; IMPLEMENTATION: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with DWR to develop and implement site-specific guidelines to determine practice: <ul style="list-style-type: none"> <li>i. applicability,</li> <li>ii. location,</li> <li>iii. extent,</li> <li>iv. configuration, and</li> <li>v. timing to reduce risk to sage-grouse and their habitats.</li> </ul> </li> </ul>
<p>AE 10: Practice implementation in isolation without concurrent grazing management prescribed to</p>	<p>CM 10:</p> <ul style="list-style-type: none"> <li>a) PLANNING: To benefit the quality of sage-grouse habitat, the umbrella systems practice Upland Wildlife Habitat Management (code 645) for the Sage-Grouse Initiative shall be used to design, implement and install the other Facilitating practice standards to ensure that sage-grouse habitat is maintained or improved following application.</li> </ul>

address sage-grouse habitat needs, can result in a reduction of sage-grouse habitat quality	
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Based on this analysis, NRCS' BA concluded that the proposed action "may affect is likely to adversely affect" (MA-LAA) the GUSG and is likely to adversely affect critical habitat. We concur on this determination programmatically, recognizing however that the application of many of the conservation practices and most of the CSP Enhancements as conditioned by the appropriate conservation measures significantly reduce the sources of risk to the species and its habitat. Further, many benefits will accrue to the species as a result of the proposed action – expressed in terms of managed acres over time on eligible private lands – as well as reducing habitat fragmentation effects at the landscape scale. Analyzed individually, some practices, because they are conditioned using appropriate conservation measures, are expected to have discountable and/or insignificant effects on the species and its critical habitat. However, because of the nature and scope of the NRCS planning framework, and the potential for cumulative, successive, or repetitive application of the covered conservation practice standards over the 27-year life of the consultation, the Service cannot effectively deconstruct these causal relationships and therefore is providing a concurrence on the MA-LAA determination at the program (proposed action) level.

#### *Interrelated and Interdependent Effects*

Interrelated activities are those that are part of the larger measures under consideration for consultation and depend on a larger measure for their justification. Interdependent activities are those that have no significant independent utility apart from the measure that is under consideration for consultation. The NRCS' BA concludes the same effects determination would apply for interrelated and interdependent activities associated with a covered project when those activities are of similar nature and magnitude.

## **5.0 SUMMARY OF EFFECTS**

### **Summary of Effects**

Short-term and localized adverse effects are expected to occur from implementation of the proposed action. For example, increased human presence, equipment and vehicle use, and associated noise disturbance, may affect Gunnison sage-grouse behavior. Noise and activity disturbances may disrupt or displace birds during critical breeding, nesting or foraging periods. Vegetation disturbance may adversely affect the availability of nesting habitat, cover from predators, or prey (invertebrate) availability, and adversely affect Gunnison sage-grouse. Soil disturbance may increase erosion, adversely affect soil stability, increase sediment deposits, and alter channel morphology. Livestock grazing may also temporarily alter vegetation composition, structure, and nutritive quality and adversely affect availability of nesting habitat, cover from predators, or prey habitat.

Long-term negative effects may also occur, however, such as permanent habitat loss or mortality of individual birds. Proposed conservation measures are expected to avoid, minimize, or offset those effects. These measures are designed to conserve habitat and reduce fragmentation, the greatest known

threat to Gunnison sage-grouse. Expected benefits would outweigh the short-term negative impacts to individuals or localized areas of habitat. Implementation of the proposed action and its conservation measures will result in strategic management of several primary threats known to affect the species.

At the rangewide level, implementation of the proposed action is intended to reduce threats and improve habitat conditions for the GUSG. The specified conservation measures are expected to provide a net conservation benefit to GUSG by maintaining, enhancing, and restoring sage-grouse populations and their habitats as well as by reducing the threats of direct mortality – despite short term adverse affects. Participants who are interested in participating in NRCS' SGI/WLFW must agree to contribute to the maintenance of sagebrush on their enrolled lands, follow the recommended standards and specifications within the umbrella Upland Wildlife Habitat Management Practice and each of the conservation practice standards used. Participating owners are not likely to convert sage-grouse habitats to unsuitable habitat, or to subdivide their properties while enrolled in the cost-share contracts offered by NRCS through the SGI/WLFW.

Temporary vegetation disturbances will be addressed via restoration of habitat by either seeding/planting (active restoration) or by implementing grazing practices and fire prevention measures to allow the natural reestablishment of sagebrush to occur (passive restoration) during the term of the individual contracts (between 2 and 10 years).

While incidental take of GUSG is expected to be minimal from the proposed action, we do anticipate limited take as a result of the proposed action. We expect that the majority of incidental take will be in the form of death or temporary harassment during conservation practice installation and operation. For some conservation practice standards, such as irrigation systems and fences, some level of incidental take is expected over the life of the practice. The scale of the effect will be landscape specific, but could involve mortality of grouse, the destruction of nests, and loss of eggs.

The overwhelming conservation outcome of implementation of the proposed action is that eligible private participants will receive NRCS technical and financial assistance that results in a reduction of the threats that adversely affect GUSG populations, more habitat under the appropriate management prescriptions, and more information being developed and disseminated on the compatibility of sustainable ranching operations with the persistence of this species across the landscape.

Ultimately, the Service believes that effective implementation of conservation practice standards and associated conservation measures are anticipated to result in a reduction of threats to the species and an improvement in habitat conditions in areas where the proposed action is implemented. A positive population response by the species would depend on the scale of the participation in the NRCS programs and stabilization or reduction of threats not addressed by the proposed action. A positive response could occur as threats are reduced, notably in addressing habitat fragmentation and improvement of habitat conditions across the landscape. This will be measured through the installation of conservation practice standards within the core areas and resource threats addressed or removed. At this point in the implementation of the WLFW/SGI and our analysis, these benefits, however, cannot be articulated in quantified metrics such as absolute increases in numbers of birds, acres of habitat restored, or population growth. The SGI science support component and the annual meeting of the partnership will provide information over time to better refine both the benefits and consequences of

WLFW/SGI. The Service and NRCS will meet at least annually to assess the overall success and progress of the effort.

*Methods, Assumptions, and Rationale for Anticipated Effects and Incidental Take*

This section discusses some of the key methods and assumptions made to estimate impacts and incidental take from the proposed action. Estimated incidental take provided in this Opinion is based primarily on the risk of birds to disturbance, and the likelihood of their injury or mortality, or reduced breeding, feeding, or sheltering. We estimate risk by evaluating the potential exposure and likely response of individual birds to project-related effects described in this Opinion. Importantly, not all birds exposed to a particular disturbance will respond negatively such that effects reach the level of take. In other words, adverse effects may occur, such as flushing of birds, but may be insignificant such that vital rates (reproduction success, survival, etc.) are not affected.

The estimates of incidental take in this biological opinion are based on an analysis of the proposed action:

- 1) Implementation and maintenance of all existing GUSG SGI conservation practices, provided all applicable conservation measures have been applied,
- 2) Implementation and maintenance of future GUSG SGI conservation plans within the life of this Opinion,
- 3) Implementation and maintenance of any existing Conservation Technical Assistance (CTA) or Financial Assistance (FA) conservation practices provided by NRCS consistent with the 2010 SGI Report, provided all applicable conservation measures have been applied,
- 4) Implementation and maintenance of any future Conservation Technical Assistance (CTA) or Financial Assistance (FA) conservation plans provided by NRCS consistent with this Opinion provided all applicable conservation measures have been applied.

The Service assessed the adverse effects or potential risk(s) to the species and its habitat from implementation of the proposed action. Scientific data that quantify the effects of the proposed projects on sage-grouse, or gallinaceous birds, is very limited. Thus, there is uncertainty in generating specific metrics for anticipated adverse effects (such as number of expected mortalities of individuals, or numbers of habitat acres temporarily or permanently lost or temporarily affected). A complex range of factors will influence the response or fate of individual birds to impacts. Factors contributing to this uncertainty include, but are not limited to: 1) inability to accurately predict the location, frequency, timing, duration, etc. of proposed projects; 2) inability to accurately measure the nature or extent of potential effects; 2) limited ability to pinpoint the source, or combined sources, of effect; 3) accounting for confounding or stochastic events such as drought, fire, or flood; 4) sources of risk that emerge outside of the enrolled lands.

Importantly, our approach incorporates the expected efficacy of the identified conservation practices and overall design of the proposed action to conserve the species – including but not limited to the follow features:

- First and foremost, spatial and temporal restrictions will be required for grazing systems and the structural practices involving the use of equipment, installation of ranch infrastructure, soil disturbance, and/or construction actions during the important nesting and brood rearing seasons of the species. These measures will cumulatively reduce the risk to the species at the times upon which it is aggregated for breeding and when females are close to lek sites sitting on nests, incubating eggs, and rearing young.
- Practice application and design (including but not limited to infrastructure placement, livestock management systems and other habitat management practices) will place priority on developing and maintaining the habitat and life history requirements of the species. Further, by incorporating the conservation measures, the expected adverse effects will be effectively managed and minimized.
- No significant permanent loss of habitat is expected or foreseen with implementation of the proposed action.

Where data are lacking regarding exposure and mortality rates for GUSG due to the various sources of risk, we applied reasonable estimates for these factors based on professional knowledge and input from NRCS and the state wildlife agencies. This includes data and information on GRSG. Table 5 identifies the key assumptions made by the Service to predict the exposure, the potential effects of this exposure, and the anticipated incidental take of individual birds. Possible implications of the assumptions are also evaluated. These assumptions and metrics are also identified and referenced in the incidental take table provided in Table 4. The anticipated take includes both existing and future SGI, WLFW, CTA, and FA practices as described in the Proposed Action, Part 2.0.

However, some metrics for anticipated adverse effects were based on, or adapted from, scientific studies. For instance, models for fence collision risk (Stevens et al. 2013) and mitigation (Stevens 2011) have been developed such that we can reasonably estimate the potential exposure and mortality rate of GUSG. We estimated that only 9.2% of action area is at high risk of fence collision. We derived the 9.2% estimate from Stevens et al. (2013) which modeled fence collision risk across 10 states where sage-grouse occur based on the average distance from leks and topographic ruggedness. The study indicated that a small proportion of the total landscape (6-14%) is at “high risk” of fence collisions, or greater than one collision per year. The study did not evaluate sage-grouse habitats in Colorado. However, greater sage-grouse habitats in Wyoming were evaluated, and approximately 9.2% of that area was found to be high risk for fence collision. Of the areas studied, we felt conditions in Wyoming are most comparable to the GUSG population area in terms of lek numbers, available breeding habitat, and topography.

**Table 4: Anticipated Incidental Take from Proposed Action (described in Section 2.0)**

Source of risk or application of conservation practice standard <sup>a</sup>	Practices <sup>l</sup> potentially producing this source of risk	Estimated frequency of use – first five years <sup>b,g</sup>	Estimated frequency of use - 27 years <sup>c,g</sup>	Estimated Extent of Source of Risk Potentially Affecting the Species <sup>d</sup>	Adjustment to exposure based upon effectiveness of conservation measures <sup>e</sup>	Incidental Take (Birds) <sup>f,h</sup>
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Disturbances/ collisions from mechanized vegetative treatments	472, 511, 449, 314, 327, 328, 340, 342, 394, 512, 315, 550, 390, 384, 382, 649, 410, 516, 500, 553, 654, 574, 642, 614, 560, 314, 362, 548, 561,	210,000 acres	420,000 acres	84,000 acres	4,200 acres	20
Vegetative manipulation or loss (non- livestock management)	472, 449, 342, 649, 410, 516, 500, 553, 654, 574, 642, 614, 560, 362, 561, 358, 441, 442, 443, 430, 378, 338, 587, 638,	16,000 acres	32,000 acres	8,000 acres	400 acres	2
Livestock management effects	528	105,000 acres	210,000 acres	52,500 acres	2,625 acres	13
Fences collisions & related effects	382, 378,	11 miles <sup>i</sup>	22 miles <sup>i</sup>	2.024 miles <sup>j</sup>	0.35 miles <sup>k</sup>	6
Limited use practices (acres)	314, 315, 327, 328, 338, 384, 394, 548, 550, 654	180,000 acres	360,000 acres	72,000 acres	3,600 acres	17
Anticipated take over 27 years					<b>TOTAL</b>	<b>58</b>

## NOTES:

- a. Relationships between identified sources and risk (=Adverse Effects) and the covered conservation practice standards are found in Appendix 3.
- b. Current use estimates based on the BA where that information was provided; otherwise, estimates were made with additional input from NRCS.
- c. Future use estimates based on the BA, where provided, and input from NRCS but generally assumes a doubling of acreage covered for the entire 27 years of the effective period of the consultation.
- d. Assumes an equal probability of injury/ mortality across all age classes. Also assumes not all birds exposed to impacts from land use will be injured or killed. Further, assumes only a portion of the acreage subject to the specific action will create a circumstance where a bird is potential exposed and a measurable injury/mortality may occur.
- e. Assumes injury/ mortality rates are reduced to 5% as a result of the beneficial effects of conservation measures
- f. Calculated by multiplying total extent of the practices average bird density per habitat type (Based on the 2014 estimate of 4,709 birds on 937,676 acres of known occupied habitat, there are approximately, or 0.00502 birds/acres.).

- g. For those practices which are not expressed in acreage – assumes area of potential effect is as follows: (1) Assumes a 30’ corridor for motorized routes; (2) Assumes 5’ corridor for non-motorized trails. (3) Assumes an 8’ wide temporary disturbance corridor for linear practices (pipelines, fences, etc).
- h. Incidental take is estimated as the injury/ mortality rate rounded up to the nearest whole number (individual bird).
- i. Assumes an 8’ wide corridor for fences, resulting in approximately 1 acre of habitat affected per mile of fence authorized.
- j. Estimated that 9.2% of the area affected by fences are high-risk collision areas (Stevens et al. 2013), where we assumed high probability of injury/ mortality without conservation measures.
- k. Assumes high collision risk areas (often near leks) will be visually marked, or designed or sited to reduce collision risk, resulting in an 83% reduction of collision events (Stevens 2011), or a 17% injury/ mortality rate.
- l. And corresponding CSP Enhancements via cross referencing of Tables 1 and 2 and Appendix 3.

Estimated incidental take provided in this Opinion is based primarily on the risk of birds to disturbance, and the likelihood of their injury or mortality, or reduced breeding, feeding, or sheltering. We estimate risk by evaluating the potential exposure and likely response of individual birds from the sources of adverse effect and/or from specific conservation practice standards as described in this Opinion. We evaluated current (baseline) and future use from the various land use categories and the resultant disturbance in occupied habitat as an indicator of potential impacts on Gunnison sage-grouse. To be clear, the current or baseline use is distinct from the assessment of the environmental baseline (see Environmental Baseline section) which considers the impacts of most current or proposed projects in the action area.

Based on discussions with NRCS and information in the BA, we estimated the frequency and extent of the application of the covered conservation practice standards within the initial 5 year window and projecting it forward to the full 27-year time period enveloped by this Opinion.

To predict the number of birds potentially exposed to project impacts, we estimated bird numbers per acre (density) across the entire range of the GUSG – the scope of the proposed action. The 2014 population estimate is 4,709 birds on 937,676 acres, or 0.00502 birds/acre.

These estimates assume that birds are evenly distributed across the range, regardless of ownership and habitat type and that all birds, at all age classes, and have an equal probability of being exposed to the various practices. Further, we generally assumed that due to the specific nature of the conservation practice standards, their expected duration, and considerations of their design – the risk to the bird was limited within 20% of the expected acreage extent of the practice. In other words, for every 10 acres of a various habitat management treatment which might produce disturbance related effects, those effects might actually create the circumstances where incidental take might occur is on 2 acres. We believe this is realistic due to the aggregate nature of the birds’ breeding behavior and other known critical life history elements that can be reasonably predicted and effectively managed. Further reduction of risk – in some cases upwards of 95% - can be achieved through application of the conservation measures identified for each practice.

The above metrics provide an indicator of potential exposure and incidental take for all NRCS practices, including livestock grazing management. While the majority of private lands are actively grazed by livestock, we do not anticipate that injury or mortality (incidental take) would occur across all of those lands. Instead, we assumed that take might occur on 25 % of grazed lands where more

“intense” impacts may be expected. For instance, heavier use by livestock is expected in typical concentrated use areas such as riparian, watering areas, fence lines, salting areas, and similar areas. Further, we assume that anticipated take in those areas is reduced by the beneficial effects of conservation measures (Tables 4 and 5).

**Table 5:** Key assumptions used to estimate impacts on, and incidental take of, GUSG.

<b>Assumptions/ Source of Uncertainty</b>	<b>Direction of Potential Bias</b>	<b>Likely Significance with Respect to Estimated Impacts, and Rationale</b>
1. Incidental take is reduced as a result of conservation measures (i.e., injury and mortality of exposed birds would be reduced to 5%).	May underestimate impacts.	Probably minor. Proposed conservation measures, best management practices, and other standards of the proposed action address known and potential impacts to the species, and indicate that take of birds will be considerably reduced.
2. Although the majority of occupied habitat on Federal lands is actively grazed by livestock, we do not anticipate all of this area will cause 5% of all exposed birds to be injured or killed. Rather, we estimated that 25% of all grazed lands in the Gunnison Basin might experience impacts such that take is probable. In those areas, incidental take would be further reduced to 5% due to conservation measures.	Unknown. May underestimate or overestimate impacts depending on the location and pattern of future projects.	Probably minor. More severe impacts are expected wherever concentrated use occurs or other areas where impacts are unavoidable. Risks during these critical use periods and concentration times are effectively managed via the conservation measures.
3. Livestock grazing use and total AUMs will not change over the 27-year term of the consultation.	May overestimate impacts.	Possibly major. If AUMs are significantly reduced over time, per recent livestock industry trends, impacts on habitat and Gunnison sage-grouse would change. Because we have no information on what forage use reductions might look like, and because the WLFW/SGI is designed to facilitate the continued use of those lands for grazing

<b>Assumptions/ Source of Uncertainty</b>	<b>Direction of Potential Bias</b>	<b>Likely Significance with Respect to Estimated Impacts, and Rationale</b>
		values, we assume that AUMs will remain static over this period.
4. Within habitats, birds at all age classes are evenly distributed across the landscape.	Unknown. May underestimate or overestimate impacts depending on the location and pattern of future projects, as well as habitat selection of birds.	Probably minor. The assumption provides the most reasonable estimate upon which we can measure and evaluate the likelihood of individual birds being exposed to stressors.
5. Average 30' width for motorized travel routes, average 5' width for non-motorized routes, and average 8' width for fences and exclosure fencing.	Unknown. May underestimate or overestimate impacts.	Probably minor. The estimated width of disturbance from travel routes is based primarily on the permitted area, and may not represent actual disturbance. Conversely, the estimates do not account for potential indirect, or offsite, impacts associated with linear disturbances.
6. The frequency and extent of acreage enrolled and/or participating in the WLFW/SGI and other NRCS programs.	Unknown. May underestimate or overestimate impacts.	Probably minor. The predicted frequency and extent of land uses are based on discussions and expected success of this voluntary Farm Bill program.
7. Take (injury, mortality, or significant habitat modification affecting the survival of the species) would be most likely to occur by way of direct effects from land use projects. Indirect effects (occurring later in time), or offsite impacts, would be less likely to result in the take of Gunnison sage-grouse. Therefore, incidental take can be estimated based on the number of acres affected directly by a given land use project, i.e., as an index (rather than adding	May underestimate impacts.	Probably minor. The proposed action prescribes measures to avoid or minimize the indirect effects of actions, such as weed invasion. Further, measures are required to avoid offsite impacts, such as noise and behavioral disturbance of birds on nearby leks. Accounting for those measures, it is reasonable to assume that the majority of incidental take of individual birds, or significant habitat modification affecting the survival of the species, would be greatest in the areas directly affected by a given project (occupied habitat). Importantly, this does not mean that we think indirect effects will

<b>Assumptions/ Source of Uncertainty</b>	<b>Direction of Potential Bias</b>	<b>Likely Significance with Respect to Estimated Impacts, and Rationale</b>
buffers to all affected areas)).		not occur, only that they will likely be less severe in terms of species response.
8. Not all individual birds exposed to disturbance will experience injury, mortality, or reduced survival.	May underestimate impacts.	Probably minor. Even without conservation measures, impacts from land use projects would be very unlikely to result in take of all exposed birds. Proposed conservation measures & best management practices address known and potential impacts to the species, and indicate that take of birds will be considerably reduced.
9. Estimated that only 9.2% of action area is at high risk of collision. We derived the 9.2% estimate from Stevens et al. (2013) which modeled fence collision risk across 10 states where sage-grouse occur based on average distance from leks and topographic ruggedness. The study indicated that a small proportion of the total landscape (6-14%) is at “high risk” of fence collisions, or > 1 collision per year. The study did not include evaluate sage-grouse habitats in Colorado. However, greater sage-grouse habitats in Wyoming were evaluated, and approximately 9.2% of that area was found to be high risk for fence collision. We felt conditions in Wyoming would be most comparable to the	Unknown. May underestimate or overestimate impacts.	Possibly major. More rugged terrain, reportedly higher flight levels of birds, and other factors may result in much lower risk of collision than that estimated for greater sage-grouse in Wyoming. Conversely, the 9.2% figure accounts only for breeding habitats primarily near leks during the breeding season. Fences located in other seasonally important habitats (summer-fall, winter, etc.) may contribute further to fence-related injury and mortality. Therefore, impacts may be higher than estimated.

<b>Assumptions/ Source of Uncertainty</b>	<b>Direction of Potential Bias</b>	<b>Likely Significance with Respect to Estimated Impacts, and Rationale</b>
population area in terms of lek numbers, available breeding habitat, and topography.		
10. For 9.2% of the total action area, where we assumed there to be high risk of sage-grouse fence collisions, 100% of exposed birds would experience injury or mortality (take) without conservation measures.	May overestimate impacts.	Probably minor. Not all exposed birds are expected to actually collide with fences. Though collisions will likely result in injury of individual birds, mortality may not occur in all instances.
11. The sage-grouse fence collision risk model (Stevens et al. 2013) was developed for breeding habitats in general and does not directly account for local bird densities.	Unknown. May underestimate or overestimate impacts.	Possibly major. As noted above, the collision risk models are based on breeding habitats only, thus potentially underestimating impacts. Conversely, not factoring in local bird densities may result in a considerable overestimate of impacts.
12. Assume all fences in high collision risk areas (often near leks) will be marked or strategically designed to reduce collision risk, with an 83% reduction of take (17% injury/mortality rate) (Stevens 2011) per acre of that fence design.	Unknown. May underestimate or overestimate impacts.	Probably minor. New fence construction will be minimal over the next 27 years, and will be marked and/ or designed to avoid or minimize sage-grouse collisions. Most avoidance and minimization efforts would be expected in high risk areas for collision (i.e., near leks or in flat topography), although similar efforts may occur in other seasonal habitats. Marking or modifying existing fences or enclosures in high risk areas will depend on available funding and resources of the action agencies.

We recognize that the resulting estimate is based on many assumptions, thus in evaluating and considering a range of values we chose to use the numerical values that represent greater amount of effect. We recognize that these assumptions will likely lead to an overestimate of potential effects to

the species rather than an underestimate of effects. However, we know of no more reasonable method for arriving at an estimate. Also, regarding the probability of overestimating the impact - this provides a cautious and reasonable “worst case” analysis for population effects and exposure pathways to individual birds. If the likely overestimate is still compatible with survival and recovery, then we can be satisfied that the actual impacts will not violate the ESA section 7(a)(2) regulatory standard.

Importantly, we also expect that conservation measures will have considerable efficiency in avoiding, minimizing, and reducing adverse effects including the injury and death of individual birds. Again, please refer to Tables 4 and 5 which detail these and other assumptions used to estimate exposure rates and incidental take of individual birds.

## CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. The action area includes a mixed ownership of lands including private, State, and Tribal held lands interspersed with BLM, USFS, and NPS lands. Future non-Federal actions reasonably certain to occur in the action area include residential development, agricultural production, State and county road maintenance activities, vehicle traffic on area roads, livestock grazing, and human infrastructure. Each of these activities has the potential to affect Gunnison sage-grouse through habitat loss, fragmentation, and/or an increase in predation or disease incidence. As stated in our final listing rule, the rangewide effects of such future threats could further compromise resiliency, redundancy and representation of the species.

## Determination of Effects on Critical Habitat

### *Introduction/Background*

On November 20, 2014, the Service determined that protection under the Endangered Species Act (ESA) is warranted for the Gunnison sage-grouse, and has finalized a rule to list the species as threatened (79 FR 69192). We have also designated critical habitat on 1,429,551 acres in southwestern Colorado and southeastern Utah (79 FR 69312).

This Biological Opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 C.F.R. 402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.

In the Service’s proposed rule, it determined that the following physical and biological features are essential for Gunnison sage-grouse:

- Space for Individual and Population Growth and for Normal Behavior
- Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements
- Cover or Shelter

- Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring
- Habitats Protected from Disturbance or Representative of the Historical, Geographical, and Ecological Distributions of the Species

Further, the Service, based upon the best available information, determined that the primary constituent elements specific to Gunnison sage-grouse are:

(i) *Landscape Specific Primary Constituent Element.*

Primary Constituent Element 1— Extensive sagebrush landscapes capable of supporting a population of Gunnison sage-grouse. In general, this includes areas with vegetation composed primarily of sagebrush plant communities (at least 25 percent of the land is dominated by sagebrush cover within a 0.9-mi (1.5-km) radius of any given location), of sufficient size and configuration to encompass all seasonal habitats for a given population of Gunnison sage-grouse, and facilitate movements within and among populations. These areas also occur wholly within the potential historical range of Gunnison sage-grouse.

(ii) *Seasonally Specific Primary Constituent Elements.*

(A) Primary Constituent Element 2— Breeding habitat composed of sagebrush plant communities that, in general, have the structural characteristics within the ranges described in the following table. Habitat structure values are average values over a project area. Breeding habitat includes lek, nesting, and early brood-rearing habitats used typically March 1 through July 15. Early brood-rearing habitat may include agricultural fields.

Table 6. Gunnison Sage Grouse Breeding Habitat Structural Characteristics

<b>Vegetation Variable</b>	<b>Amount in Habitat</b>
Sagebrush Canopy	10–25 percent
Non-sagebrush Canopy*	5–15 percent
Total Shrub Canopy	15–40 percent
Sagebrush Height	9.8–19.7 in (25–50 cm)
Grass Cover	10–40 percent
Forb Cover	5–40 percent
Grass Height	3.9–5.9 in (10–15 cm)
Forb Height	2.0–5.9 in (5–15 cm)

\* Includes shrubs such as horsebrush (*Tetradymia* spp.), rabbitbrush (*Chrysothamnus* spp.), bitterbrush (*Purshia* spp.), snakeweed (*Gutierrezia sarothrae*), greasewood (*Sarcobatus* spp.), winterfat (*Eurotia lanata*), Gambel's oak (*Quercus gambelii*), snowberry (*Symphoricarpos oreophilus*), serviceberry (*Amelanchier* spp.), and chokecherry (*Prunus virginiana*).

(B) Primary Constituent Element 3—Summer-late fall habitat composed of sagebrush plant communities that, in general, have the structural characteristics within the ranges described in the following table. Habitat structure values are average values over a project area. Summer-fall habitat

includes sagebrush communities having the referenced habitat structure values, as well as agricultural fields and wet meadow or riparian habitat types. Wet meadows and riparian habitats are also included qualitatively under PCE 5 below.

Table 7. Gunnison Sage Grouse Summer-late fall habitat structural characteristics

<b>Vegetation Variable</b>	<b>Amount in Habitat</b>
Sagebrush Canopy	5–20 percent
Non-sagebrush Canopy*	5–15 percent
Total Shrub Canopy	10–35 percent
Sagebrush Height	9.8–19.7 in (25–50 cm)
Grass Cover	10–35 percent
Forb Cover	5–35 percent
Grass Height	3.9–5.9 in (10–15 cm)
Forb Height	1.2–3.9 in (3–10 cm)

\* Includes shrubs such as horsebrush (*Tetradymia* spp.), rabbitbrush (*Chrysothamnus* spp.), bitterbrush (*Purshia* spp.), snakeweed (*Gutierrezia sarothrae*), greasewood (*Sarcobatus* spp.), winterfat (*Eurotia lanata*), Gambel's oak (*Quercus gambelii*), snowberry (*Symphoricarpos oreophilus*), serviceberry (*Amelanchier* spp.), and chokecherry (*Prunus virginiana*).

(C) Primary Constituent Element 4— Winter habitat composed of sagebrush plant communities that, in general, have sagebrush canopy cover between 30 to 40 percent and sagebrush height of 15.8 to 21.7 in (40 to 55 cm). These habitat structure values are average values over a project area. Winter habitat includes sagebrush areas within currently occupied habitat that are available (i.e., not covered by snow) to Gunnison sage-grouse during average winters.

(D) Primary Constituent Element 5— Alternative, mesic habitats used primarily in the summer-late fall season, such as riparian communities, springs, seeps, and mesic meadows near sagebrush communities.

#### *Effects on the Primary Constituent Elements*

The Service determines that the proposed action is likely to adversely affect proposed Gunnison sage-grouse critical habitat because the actions and activities have the potential to temporarily degrade several primary constituent elements due the course of the implementation of the covered Conservation Practice Standards (notably PCE 2-5). Although short term changes are expected, the covered Conservation Practice Standards as conditioned by the conservation measures are designed to provide and produce long term restoration and conservation benefits to the Gunnison sage-grouse and the proposed PCE. Additionally the proposed action is expected to reduce the effects of fragmentation by facilitating the creation and restoration of sage brush habitat and the associated vegetative structure conducive to persistence of the species and its habitat needs (PCE 1).

In describing the intended outcomes of the effects on PCEs, the Service has considered two scales. The first is the beneficial, negative, and benign consequences of each SGI Conservation Plan. The second scale is describing the expected outcomes at the program (e.g., proposed action) scale.

### *Programmatic (Proposed Action) Outcomes*

As stated and described throughout this document and within the NRCS' Biological Assessment, the primary goal of the WLFW/SGI is to implement appropriate conservation actions at scales sufficient to influence a positive population response through a targeted and strategic approach within the context of NRCS' authorities under the Farm Bill.

All conservation plans developed under the WLFW/SGI are required to have Upland Wildlife Habitat Management (645) as the core practice. Implementing these plan using 645 is essential because this core practice ensures that all other covered practices are implemented specifically to benefit GUSG populations and their habitats. The purpose of the practice is to treat upland wildlife habitat concerns identified during the conservation planning process to (1) provide shelter, cover, and food in proper amounts, locations and times to sustain GUSG during all phases of its life cycle, or (2) enable movement.

In considering the design of individual Conservation Plans, NRCS will evaluate that particular landowners' situation on how it can help support the program goals of the proposed action. One primary factor is the spatial scale and as importantly, GuSG population isolation and habitat fragmentation. In managing landscape effects (negative and beneficial), the desired scale for NRCS program administration will be the identified critical habitat units. In order to achieve sustainability for the affected GuSG populations within each of the critical habitat units, each of the seasonally specific PCEs identified above are needed. By evaluating the participation, value, and potential of each enrolled landowner and subsequently creating a Conservation Plan which can maintain, create, and/or sustain the affected PCEs over time, the optimal benefits for GuSG conservation can be achieved.

Further, the aggregative effects of the resulting benefits of managing for PCEs and opportunities to create additional habitats outside of the critical habitat units will reduce species-level fragmentation effects outlined in PCE 1 above.

### *Individual SGI Conservation Plan Outcomes*

It is important to note that the Service does not expect, in every situation, that an individual landowners' via participation in the WLFW/SGI will maintain and/or create all of the Seasonally Specific Primary Constituent Elements (PCEs 2 through 5 above) at every instant in time. This is unrealistic due to the nature of the voluntary nature of the proposed action; the landscape position of the affected lands; their existing condition; the expected land uses; the adjustment period between an unmanaged system and a managed system, among other factors. For each enrolled landowner, the expectation to support/create any of the PCEs as outlined above will be determined initially by the application of the WHEG and other assessment tools such as ESDs. These tools will initially identify the GuSG limiting factors for that particular plan and the identified conservation practices will then focus efforts at addressing these limiting factors in priority order. Landscape position, role in maintaining population/ lek functionality, and availability/potential of the affected lands to support PCEs 2 through 5 will also affect the decision(s) on where and how each enrolled lands can support the

WLFW/SGI program goals. After this assessment, the Conservation Plan is expected to address the species limiting factors/resource concerns in priority order.

The vegetative requirements as depicted in Tables 6 and 7 above are similar to the metrics identified in the NRCS' WHEG and beneficial outcomes (e.g., improvements in the quality, diversity, and structure of the sage-brush habitats) are expected with enrollment into the proposed action. Some short-term changes in vegetative structure may occur using restoration techniques, the structural practices, and during the adjustment period for a grazing management system. However, for each Conservation Plan, we anticipate that the long term outcome will be beneficial to the targeted PCEs identified in that affected Conservation Plan.

Further, the conservation measures are fully expected to minimize the intensity, duration, and scale of these adverse effects as they represent a strategy of avoidance and minimization which targets the following essential components of the species' habitat needs:

- First and foremost, spatial and temporal restrictions will be required for grazing systems and the structural practices involving the use of equipment, installation of ranch infrastructure, soil disturbance, and/or construction actions during the important nesting and brood rearing seasons of the species. These measures will cumulatively reduce the risk to the species at the times upon which it is aggregated for breeding and when females are close to lek sites sitting on nests, incubating eggs, and rearing young.
- Practice application and design (including but not limited to infrastructure placement, livestock management systems and other habitat management practices) will place priority on developing and maintaining the habitat and life history requirements of the species. Further, by incorporating the conservation measures, the expected adverse effects will be effectively managed and minimized.
- The expected programmatic outcome of the Proposed Action is that more habitat and more acres will be managed which maintain and/or create all of the Seasonally Specific Primary Constituent Elements (PCE 2 through 5) and reducing fragmentation effects (PCE 1) at the appropriate temporal and landscape scale.
- No significant permanent loss of habitat is expected or foreseen with implementation of the proposed action.

## CONCLUSION

Based on a review of the current status of affected species, the environmental baseline for the action area, effects of the proposed action, and cumulative effects, it is the Service's Biological Opinion that:

1. The proposed action is not likely to jeopardize the continued existence of Gunnison sage-grouse because:
  - a. Implementation of the proposed action, especially the collective features of the WLFW/SGI, will provide a long-term net benefit for Gunnison sage-grouse and its habitat requirements. Implementation of the proposed action and its conservation measures will result in management of several primary threats known to affect the species, including habitat loss and fragmentation. These beneficial effects are expected to accrue over time.

- b. Short-term, localized, and unavoidable adverse effects to the species and its habitat are expected to occur from projects implemented under the proposed action. However, as the proposed actions are completed, these short-term impacts will be ameliorated as the benefits from habitat improvements and ongoing conservation measures begin to accrue. Long-term negative effects may also occur, however, such as minor permanent habitat loss or occasional mortality of individual birds. The proposed conservation measures are expected to avoid, minimize, and offset those effects.
2. The proposed action will not destroy or adversely modify proposed Gunnison sage-grouse critical habitat. Any anticipated habitat impacts within critical habitat are not expected to permanently degrade or alter its conservation role for the Gunnison sage-grouse in any substantial way. In fact, the Service believes that the proposed action is designed to improve the species' Primary Constituent Elements (as defined by the Service in its final rule) over the long term.

#### INCIDENTAL TAKE STATEMENT

Note: Prohibitions against taking the species found in section 9 of the Act do not apply until the species is listed. The incidental take statement would become effective upon listing of Gunnison sage-grouse and designation of critical habitat.

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect." Harm is further defined by the Service "... may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering." Harass is defined by the Service as "... an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering." Incidental take is defined as take that is incidental to, and not the purpose of, carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

For exemption from incidental take under section 7(o)(2), the measures described below are understood as non-discretionary, and must be implemented and applied by the NRCS as binding conditions of any project, or contract issued to parties conducting activities under the proposed action. Furthermore, actions and projects inconsistent with the proposed action as described, and its proposed conservation measures, are not covered for incidental take provided in this Opinion.

#### *Estimated Incidental Take*

Applying the methods and assumptions described above and Tables 4 and 5, the estimated incidental take of Gunnison sage-grouse due to the proposed action is 58 birds or an average of approximately 2 birds per year across the action area.

#### *Important considerations regarding take estimates*

As mentioned earlier, the Service and NRCS recognize the assumptions inherent in these calculations, and that it likely creates an overestimate of birds taken. This is important to note, because as the proposed action is implemented, the expectation is that the improved habitat will increase the success of the GUSG. Thus, even though we have reviewed that estimate relative to the current condition of the species, as we reach the extent of take estimated above in the future, the status of species across its range should be improving on enrolled lands within the SGI/WLFW, reducing the overall effect of that take to the species as a whole.

#### *Monitoring Incidental Take*

Take will be monitored annually by practice, but re-initiation of consultation will only be required if the total take estimated for all effects and conservation practices exceeds 58. The amount of estimated annual take during the 27-year life of the project may be adjusted based on monitoring of contracts and research that provides additional information on anticipated rates of injury or mortality.

If any new information indicates that the proposed land uses and conservation measures are resulting in take levels different than that described herein, consultation may be reinitiated to evaluate changes to the Opinion.

#### *Effect of the Take*

Although we anticipate some nests, eggs and chicks may be destroyed, the Service concludes that implementation of the conservation practices as conditioned by the conservation measures should ultimately result in an overall increase of habitat quantity and quality in the long term on eligible lands that participate in NRCS programs. The expected improvements in habitat quantity and quality will result in concurrent increases in GUSG abundance (through greater adult and juvenile survivorship, improved nest success, and recruitment rates) and distribution in the action area. The anticipated increase in abundance of GUSG as a result of the WLFW/SGI should, in turn, result in a net reduction in the effect of anticipated take. Incidental take, therefore, is not expected to nullify the conservation benefits anticipated to accrue under the proposed action. Conversely, we expect the long-term benefits of the WLFW/SGI will greatly outweigh the anticipated short-term adverse effects of anticipated take.

We have determined that the level of anticipated take is not likely to result in jeopardy to Gunnison sage-grouse, or in adverse modification of designated critical habitat. Implementation of the proposed conservation measures will advance the recovery of the species and result in a net increase in available habitat to the species over the long term. However, the Service advises the NRCS to consider implementing the following reasonable and prudent measures.

#### REASONABLE AND PRUDENT MEASURES

The Service believes that the following reasonable and prudent measures and their implementing terms and conditions are necessary and appropriate for NRCS to minimize impacts of incidental take of Gunnison sage-grouse. If the species is listed, in order to be exempt from the prohibitions of Section 9 of the ESA, the NRCS must ensure that implementation of the proposed action complies with the following Terms and Conditions which implement the Reasonable and Prudent Measures.

The Service believes that the following Reasonable and Prudent Measures are necessary and appropriate to minimize impacts of incidental take of GUSG:

#### **Reasonable and Prudent Measure 1**

The NRCS shall ensure that the agreed-upon conservation measures and appropriate buffers and setbacks and other conservation elements outlined in Tables 1 and 2 and in [Appendix 4](#) are incorporated into every Conservation Plan.

**Term and Condition 1 for Reasonable and Prudent Measure 1**

NRCS will continue to work closely with Colorado and Utah’s wildlife agencies to ensure that any additional avoidance and/or minimization measures will be incorporated into the affected participant’s Conservation Plan(s). NRCS will seek periodic coordination with the local Service offices as needed as well.

**Reasonable and Prudent Measure 2**

The NRCS shall meet annually with the Service to ensure continuity and consistency throughout the 27-year term of the take authority and regulatory predictability for enrolled participants, and to discuss and report on the success(es) and challenges of the inherent complexity of the proposed action.

**Term and Condition 1 for Reasonable and Prudent Measure 2**

The NRCS will provide a report annually to the Service no later than February 15th of each year. This report will detail results of monitoring, changes to any practice standard or specification, instances of deviation from the conservation measures, and any instances take. Each of these items will be reported for each population.

The above process for modifications can be included in the annual review conducted between the Service and NRCS and other invited partners and experts. During the annual review meeting, other items and information pertinent to the Biological Assessment or Opinion (new information, a summary of the previous years’ changes, new science, new research, etc) will be discussed and incorporated where agreed. On an annual basis, the NRCS will provide a summary of accomplishments of the proposed action in a manner that is consistent with the Opinion and its responsibilities under the Farm Bill, including but not limited to:

- a. Acreage/frequency of each conservation measure and a breakdown between participants enrolled/not enrolled in SGI/WLFW;
- b. Results and updates/improvements from the monitoring and assessment tools (WHEG, ESD, Threat Checklist);
- c. Information on the efficacy of the conservation measures specific to the expected benefits where available;
- d. Results and information on the State Wildlife Agency coordination process outlined in [Appendix 4](#) for the covered conservation practice standards; and
- e. Circumstances and details of any incidental take events of GUSG.

**CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency actions. The Service offers the following conservation recommendations:

Develop an implementation process to ensure local NRCS and affected Service offices have the appropriate level of training and understanding of the conservation measures, the use of the monitoring elements as proposed, and other operational components identified in this Biological Opinion. The Service's Partners for Fish and Wildlife Program will continue to closely coordinate with NRCS to help implement the WLFW/SIG and related conservation efforts.

As the science support and monitoring elements of the WLFW/SIG begin to produce information and data, NRCS should share this information with a wide range and diverse collection of partners (State Fish and Wildlife Agencies, Association of Fish and Wildlife Agencies, Western Association of Fish and Wildlife Agencies, Western Governors Association, and others) to further enhance the conservation outcomes of the proposed action.

Continue to enter into easements for working lands available under the Farm Bill to enhance current WLFW/SIG efforts by providing a mechanism for delivering long-term benefits to the GUSG and sustainable ranching.

#### REINITIATION NOTICE

This concludes the Service's Biological Opinion for potential effects of the proposed action. Re-initiation of formal consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If the amount or extent of taking specified in the incidental take statement is exceeded; (b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the Opinion; or (d) If a new species is listed or critical habitat designated that may be affected by the identified action.

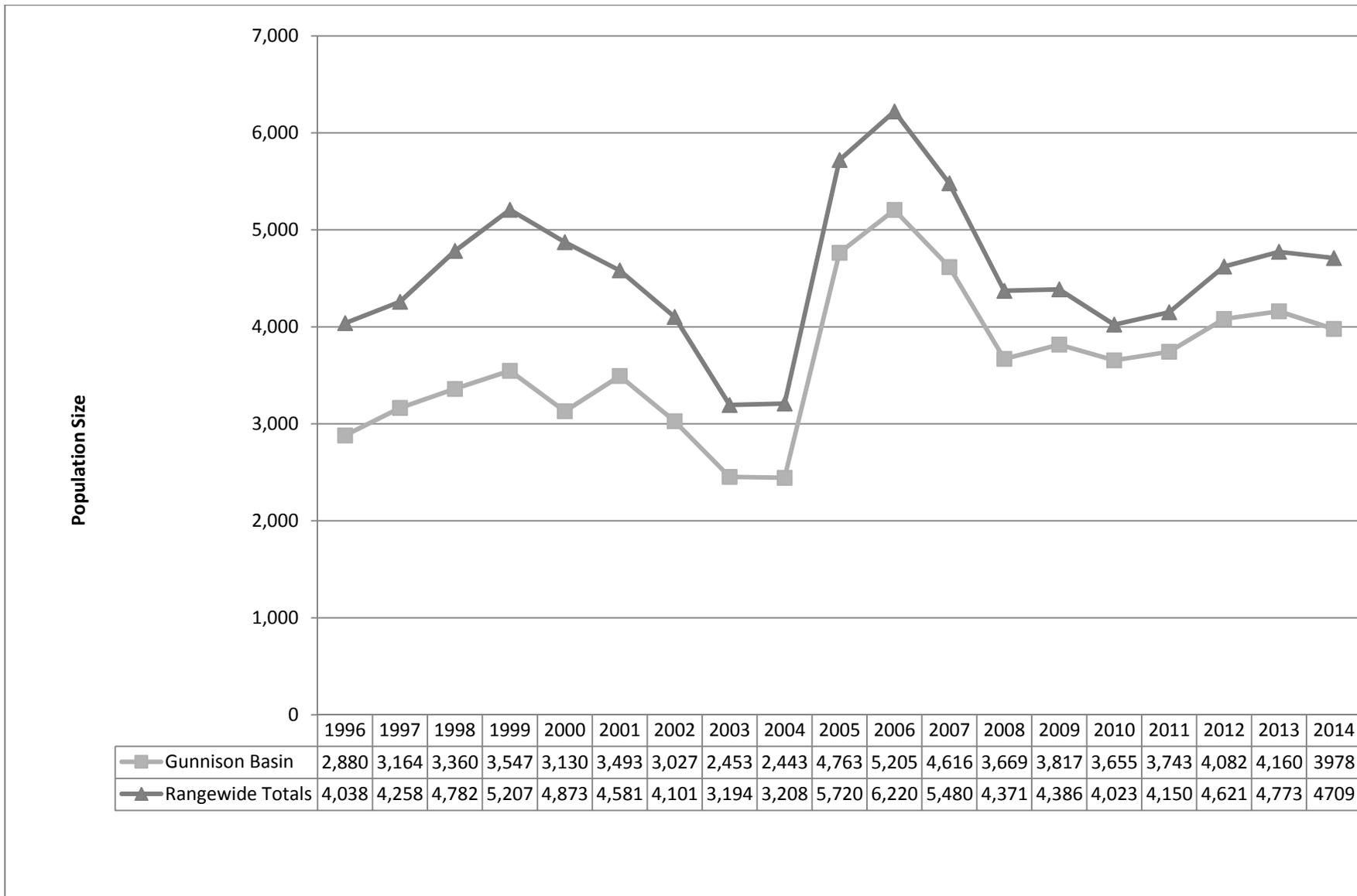


Figure 2. GUNNISON SAGE-GROUSE POPULATION TREND (1996-2014). Population estimates by year for the Gunnison Basin population and the rangewide total Gunnison sage-grouse population derived from the formula presented in the Gunnison sage-grouse

Rangewide Conservation Plan (GSRSC<sup>a</sup> 2005, pp. 44–45) applied to high male counts on leks (CDOW<sup>b</sup> 2012a, pp. 1-3; CPW 2013a, entire; CPW 2014d, p. 1).

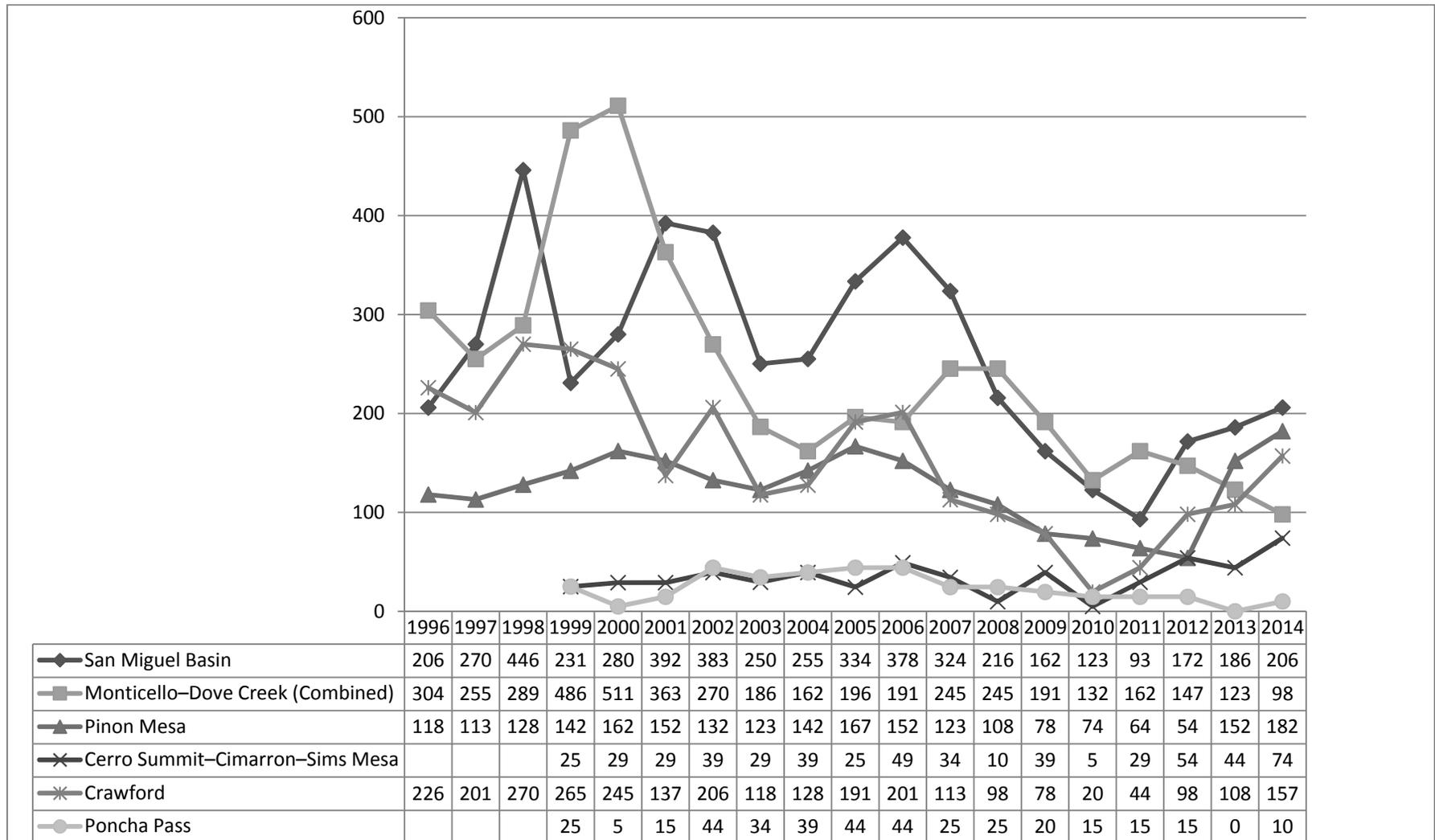


Figure 3. GUNNISON SAGE-GROUSE SATELLITE POPULATION TRENDS. Population estimates by year for the six satellite populations of Gunnison sage-grouse derived from the formula presented in the Gunnison sage-grouse Rangewide Conservation Plan (GSRSC<sup>a</sup> 2005, pp. 44–45) applied to high male counts on leks (CDOW<sup>b</sup> 2012a, pp. 1-3; CPW 2013a, entire; CPW 2014d, p. 1).

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**Federal Register Citations:**

- 75 FR 59804. Endangered and Threatened Wildlife and Plants; Determination for the Gunnison Sage-grouse as a Threatened or Endangered Species. September 28, 2010.
- 78 FR 2486. Endangered and threatened wildlife and plants; endangered status for Gunnison sage-grouse; proposed rule. January 11, 2013.
- 78 FR 2540. Endangered and threatened wildlife and plants; designation of critical habitat for Gunnison sage-grouse; proposed rule. January 11, 2013.
- 79 FR 69192. Endangered and threatened wildlife and plants; threatened status for Gunnison sage-grouse; final rule. November 20, 2014.
- 79 FR 69312. Endangered and threatened wildlife and plants; designation of critical habitat for Gunnison sage-grouse; final rule. November 20, 2014.

## **APPENDIX 1 – NRCS Conservation Planning Framework**

Local NRCS conservation planners develop conservation plans for clients that address environmental resource concerns on private, non-Federal, or Tribal lands. NRCS conservationists help individuals and communities to take a comprehensive approach to planning the proper use and protection of natural resources on these lands through a nine-step planning process described in the NRCS “National Planning Procedures Handbook”.

As part of this conservation planning effort, individual environmental reviews called Environmental Evaluations (EE) are completed which inform the conservation planning effort and assist the Agency’s compliance with NRCS regulations that implement NEPA. The EE is a concurrent part of the planning process in which the potential long-term and short-term impacts of an action on people, their physical surroundings, and the natural environment are, evaluated and alternative actions explored. The EEs and conservation plans are developed to assist the client in making decisions and implementing the conservation practices identified in the conservation plan. A Conservation plan is a record of the client’s decision to implement of one or more conservation practices which prescribe the actions necessary to address the identified resource concerns in need of treatment. For more information please visit NRCS’ Environmental Compliance website at <http://www.nrcs.usda.gov> (Technical Resources/Natural Resource Assessment/Environmental Compliance).

### **Conservation Practices**

NRCS provides technical and financial assistance by planning and designing conservation practices that achieve the identified conservation needs. Each conservation practice has an established standard, which is contained in the Field Office Technical Guide and includes the following elements:

- definition and purposes of the practice,
- conditions in which the practice applies,
- minimum criteria to be applied supporting each purpose,
- additional elements to be considered,
- required plans and specifications, and
- operation and maintenance requirements

NRCS practice standards are developed at the national level and establish the minimum level of acceptable quality for planning, designing, installing, operating, and maintaining a conservation practice. These standards are developed through a multi-disciplinary science-based process in order to maximize the success and minimize the risk of failure of the conservation practice. When a conservation practice standard is developed or revised at the national level, NRCS publishes a notice in the Federal Register of the availability of the standard for review and comment for a period of not less than 30 days from the date of publication. Standards from the “National Handbook of Conservation Practices” and interim standards are used and implemented by States, as needed, and may be modified to include additional requirements to meet Federal, State, Tribal, or local needs. Because of wide variations in soils, climate, and topography, States can revise these national standards and develop specifications to add special provisions or provide additional details in the conservation practice standards. State laws and local ordinances or regulations may also dictate more stringent criteria; in no case, however, are the criteria of the national conservation practice standard reduced. For the GUSG, conservation practices have been modified to include additional conservation measures necessary to mitigate impact and/or to assist in the recovery of the species. See Appendix 3 for conservation measures associated with each practice.

For more information, please refer to the NRCS National Planning Procedures Handbook, Amendment 5. Dated January 5, 2013.

## APPENDIX 2 - WLFW ESA Predictability Agreement between the Service and NRCS



### United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington, D.C. 20240



AUG - 3 2012

In Reply Refer To:  
FWS/AES/52307

Mr. Dave White  
Chief, Natural Resources Conservation Service  
1400 Independence Ave., SW, Room 5105-A  
Washington, DC 20250

Dear Mr. <sup>Dave</sup>White:

Thank you for your letter dated August 2, 2012 about the Working Lands for Wildlife (WLFW) partnership, which is successfully leveraging the capabilities and resources of our two agencies. We greatly appreciate the collaboration between the Natural Resources Conservation Service (NRCS) and U.S. Fish and Wildlife Service (Service) staff, and the leadership that you have shown to strategically target funding for working lands and sensitive species. This effort clearly demonstrates that productive working rural lands are compatible with the needs of wildlife and their habitats, achieving the missions of both NRCS and the Service.

The purpose of this letter is to describe the Service's approach to candidate conservation under the Endangered Species Act (ESA) and predictability for landowners who participate in WLFW. As referenced in your letter, the Service has recently completed conference opinions for three of the four candidate species involved in WLFW, including lesser prairie chicken, the eastern portion of the gopher tortoise's range, and New England cottontail. In addition, the Service had previously completed an effective conference report for the greater sage grouse, the fourth candidate species involved in WLFW. In these documents, the Service analyzed the effects to these species from the implementation of specific conservation practices by landowners who choose to participate in WLFW. These conservation practices and associated conservation measures were developed in partnership by our agencies to benefit the species and their habitats and be fully compatible with working lands.

The Service will be determining in the future whether to list each of these candidate species as threatened or endangered under the ESA. In the event that any of the species are listed, the Service is committed to validating the conference report and opinions as biological opinions for NRCS under section 7 of the ESA, and exempting any incidental take as described in the biological opinions associated with implementing the specified conservation practices. As a result, the predictability for landowners is clear. They will know that the conservation practices will continue to benefit wildlife for as long as they are implemented, and that any ESA issues associated with their implementation have been already addressed in full.



You also asked how we might encourage landowners to continue to implement these beneficial conservation practices beyond the term of their program contract with NRCS. The Service also recognizes the value of landowners voluntarily choosing to continue implementing the conservation practices after each individual program contract with NRCS under WLFW ends. These contracts can extend from one to fifteen years in length, depending on the species involved and the conservation practices employed. Continuing the implementation of the conservation practices beyond this period would advance the longer-term goals of WLFW and both agencies' missions.

Should any of the candidate species in WLFW be listed in the future, the Service intends to exempt through section 7 any incidental take that is anticipated to occur from the implementation of the conservation practices if a landowner with a WLFW program contract voluntarily chooses to continue implementing the practices after the program contract ends. The Service will review the effects of implementing the specified conservation practices to these species over a 30-year period and exempt any incidental take anticipated to occur from their implementation. Each landowner involved in WLFW will have the sole discretion whether or not to continue implementing the conservation practices at the end of the contract with NRCS. If a landowner chooses, however, to continue implementing the conservation practices defined through our WLFW partnership, they will have predictability and the confidence in knowing that any ESA issues associated with their implementation over a 30-year period will have already been addressed in full. By taking this step, the Service hopes to encourage the long-term implementation of the conservation practices and associated conservation measures.

The Service also notes that two other species included in WLFW are already listed under the ESA, the Southwest willow flycatcher and the bog turtle. For these two species, the Service has completed biological opinions and exempted any incidental take anticipated in the biological opinions to occur from implementation of the conservation practices. In addition, the western portion of the gopher tortoise's range is currently listed (the eastern portion of the range is currently a candidate species as noted above), and the Service has completed a biological opinion and exempted any incidental take anticipated in the biological opinion to occur from implementation of the practices in this portion of the range. Furthermore, the golden-winged warbler is also included in WLFW. This species is neither currently listed under the ESA nor a candidate species for listing. Should the species status change in the future and the potential need for listing be considered, the Service intends to follow the same approach to ESA predictability for NRCS and landowners that has been used for the other species in WLFW.

As WLFW moves forward, we will have the opportunity to gauge the success of the conservation practices over time, and potentially gain information that will allow us to refine them and achieve even better results for landowners, NRCS, and the Service. The Service is committed to this approach of learning and adaptive management in partnership with NRCS and the landowners participating in WLFW. Any refinements to the conservation practices would be developed in full collaboration with NRCS, using information gained from on-the-ground implementation of WLFW.

The Service is also committed to developing more tools for landowners. We are particularly interested in pursuing partnerships using Candidate Conservation Agreements with Assurances with landowners, which can provide long term conservation options and regulatory certainty.

Thank you again for your leadership in working lands conservation. If you have any questions, please contact Gary Frazer, Assistant Director for Endangered Species, at (202) 208-4646.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. M. A.", is written over a horizontal line.

DIRECTOR

### APPENDIX 3 - Comprehensive Analysis of Each Covered Conservation Practice Standard<sup>1</sup>

**NOTE:** For practices implemented through the Working Lands for Wildlife (WLFW) or the Sage Grouse Initiative (SGI), the core practices Upland Wildlife Habitat Management (645) and Prescribed Grazing (528), when livestock are present, shall be used in all conservation plans in order to determine which, if any, facilitating conservation practices are needed, as well as the extent, location, and timing of facilitating practices to ensure that GUSG habitat is maintained or improved following application.

The term *occupied and historic lek*, is defined an open area where 1 or more Gunnison sage-grouse have been observed on more than 1 occasion, engaging in courtship or breeding behavior in the last 5 years.

#### Conservation Practice Standards (CPS) – Management Practices

##### CPS: Upland Wildlife Habitat Management (645) (CORE MANAGEMENT PRACTICE)

**Definition:** Provide and manage upland habitats and connectivity within the landscape for wildlife.

**Purpose:** This practice will be applied to treat and manage upland GUSG habitat concerns identified during the conservation planning process, to provide shelter, cover, and food in proper amounts, locations and times to sustain sage-grouse that inhabit riparian areas and uplands during a portion of their life cycle. Application of this practice shall remove or reduce limiting factor(s) in their order of significance, as indicated by results of the habitat evaluation.

**Resource concerns:** Factors that reduce habitat quality or otherwise limit population growth.

**Practice Application:** This core management practice is anticipated to be implemented on an average of 49,700 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

##### Average Anticipated Usage:

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
200	7,000	1,000	5,000	35,000	500	0	1,000
<sup>1</sup> Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass							

**Potential Beneficial Effect(s) to GUSG:** This core management practice is used to create and improve GUSG breeding, nesting, brood rearing, late brood rearing, and winter habitat, and used to reduce threats to GUSG that determine population growth.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds.

##### Conservation Measures:

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

##### CPS: Prescribed Grazing (528) (CORE MANAGEMENT PRACTICE) – when livestock are present.

**Definition:** Managing the harvest of vegetation with grazing and/or browsing animals.

**Purpose:** This practice may be applied to improve or maintain desired species composition and vigor of plant communities, improve or maintain quantity and quality of forage for grazing and browsing animals' health and productivity, improve or maintain surface and/or subsurface water quality and quantity, improve or maintain

<sup>1</sup> Similar CSP Enhancement Activities appearing in Table 2 are covered in this analysis by crossreferencing with their respective Conservation Practice Standards.

riparian and watershed function, reduce accelerated soil erosion, and maintain or improve soil condition, improve or maintain the quantity and quality of food and/or cover available for wildlife, and manage fine fuel loads to achieve desired conditions. In GUSG habitat, this practice is critical to ensure rangelands are managed sustainably to provide habitat requirements for all life stages of GUSG.

**Resource concerns:** Unrestricted livestock grazing can remove desired vegetation and change plant communities from desired ecological states to undesirable states where invasive and other undesirable plant species predominate. Additionally, unrestricted grazing may lead to overharvest of plant resources, decrease residual cover, decrease plant litter on the soil surface, increase bare ground, accelerate soil erosion rates, decrease water quality, and reduce the overall habitat quality for wildlife, including sage-grouse.

**Practice Application:** This core management practice is anticipated to be implemented on an average of 104,800 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
200	94,000	2,000	5,000	2,000	600	0	1,000

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice assures that stocking rate is in balance with forage supply, season of use is rotated to ensure plants have adequate reproduction opportunity, and rangeland is monitored to inform adaptive management. These measures ensure that rangelands are managed sustainably to provide continued ecological processes, forage for livestock and wildlife, and habitat for wildlife, including GUSG. Planned grazing systems will provide adequate cover for GUSG and can be implemented to increase residual cover of perennial grasses and forbs to improve sage-grouse nesting cover and success. Increased residual cover will also improve plant litter cover over the soil surface. Plant litter facilitates better moisture infiltration and produces more vegetative cover for nesting grouse as well as increased forbs for brood habitat. Grazing system can also decrease the time any one pasture is exposed to grazing animals and people reducing overall disturbance of GUSG. Can also be used to produce a mosaic of vegetation successional stages to benefit GUSG (e.g. create areas of greater forb and resulting insect production, create areas of higher residual cover for nesting birds, create open lek habitat, open up areas of very dense sagebrush to stimulate herbaceous production). Additionally, prescribed grazing can improve riparian and wet meadow habitat to produce better sage grouse forage in the form of succulent forbs and insects. Browsing could improve sagebrush palatability.

**Potential Adverse Effect(s) to GUSG:** AE I: Physical disturbance (including noise) of birds. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Wetland Wildlife Habitat Management (644) (FACILITATING MANAGEMENT PRACTICE)**

**Definition:** Retaining, developing or managing wetland habitat for Gunnison sage-grouse.

**Purpose:** This practice may be applied to maintain, develop, or improve wetland habitat for GUSG and associated flora and fauna; to create and improve GUSG brood rearing habitat.

**Resource concerns:** Factors that reduce habitat quality or otherwise limit population growth.

**Practice Application:** This management practice is anticipated to be implemented on an average of 160 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the goals of the NRCS GUSG conservation programs.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1]</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
20	20	20	20	20	20	20	20

<sup>1]</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** This practice can be used to create and improve GUSG brood rearing habitat.

**Potential Adverse Effect(s) to GUSG:** AE I: Physical disturbance (including noise) of birds. AE 10: Practice implementation in isolation without concurrent management prescribed to address sage-grouse habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Restoration and Management of Rare and Declining Habitats (643) (FACILITATING MANAGEMENT PRACTICE)**

**Definition:** Restoring, conserving, and managing unique or diminishing native terrestrial and aquatic ecosystems.

**Purpose:** To return aquatic or terrestrial ecosystems to their original or usable and functioning condition and to improve biodiversity by providing and maintaining habitat for fish and wildlife species associated with the ecosystem.

**Resource concerns:** Cropland fragments sage-grouse habitat, current rangeland condition does not have desired benefits to the species invasive or undesirable plants do not provide needed sage-grouse habitat according to ecological site potential, or planted species do not reach their potential to provide sage-grouse habitat.

**Practice Application:** This management practice is anticipated to be implemented on an average of 160 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the goals of the NRCS GUSG conservation programs.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1]</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
20	20	20	20	20	20	20	20

<sup>1]</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Utilizing this practice can reduce habitat fragmentation and help restore desired diverse grass, forb, and sagebrush plant communities providing quality GUSG habitat.

**Potential Adverse Effect(s) to GUSG:** AE I: Physical disturbance (including noise) of birds. AE 10: Practice implementation in isolation without concurrent management prescribed to address sage-grouse habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Access Control (472) (FACILITATING MANAGEMENT PRACTICE)**

**Definition:** The temporary or permanent exclusion of animals, people, vehicles, and/or equipment from an area.

**Purpose:** This practice may be applied to prevent, restrict, or control access to an area, maintain or improve the quantity and quality of natural resources, or minimize liability and human health concerns. This practice can be used to manage disturbance to GUSG and associated habitats.

**Resource concerns:** Excessive vehicle, domestic animal, or people activities can disturb certain wildlife species at critical seasons thus decreasing breeding success and/or survival. Unmanaged vehicle, domestic animal, or people activities can physically damage important habitat areas thus decreasing breeding success and/or survival.

**Practice Application:** This management practice is anticipated to be implemented on an average of 5,000 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Feet per Gunnison Sage-Grouse Population Unit <sup>1]</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
500	1,000	500	1,000	0	1,000	500	500

<sup>1]</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** This practice can be used to reduce or eliminate disturbance to GUSG and associated habitats.

**Potential Adverse Effect(s) to GUSG:** AE I: Physical disturbance (including noise) of birds. AE 3: Increased potential for invasive plants. AE 5: Increased fire hazard. AE 10: Practice implementation in isolation without concurrent management prescribed to address sage-grouse habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment

vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 5: Woody slash shall be treated if significant build-up of fuels occurs (typically in phase II and III juniper treatments). Slash piles shall be burned when wildfire risk is low (usually when soils are frozen or saturated). Follow state forestry laws, when applicable, for treating slash to minimize wildfire risk.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Forage Harvest Management (511) (FACILITATING MANAGEMENT PRACTICE)**

**Definition:** The timely cutting and removal of forages from the field as hay, green-chop or ensilage.

**Purpose:** This practice may be applied to optimize yield and quality of forage at the desired levels, promote vigorous plant re-growth, manage for the desired species composition, use forage plant biomass as a soil nutrient uptake tool, control insects, diseases and weed, to maintain and/or improve wildlife habitat, and to maintain a vigorous plant community that provides cover and insect populations in GUSG brood rearing habitat.

**Resource concerns:** Performing unplanned haying operation in fields used by GUSG can result in mortality.

**Practice Application:** This management practice is anticipated to be implemented on an average of 160 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
20	20	20	20	20	20	20	20
<sup>1</sup> Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass							

**Potential Beneficial Effect(s) to GUSG:** Maintains vigorous plant community for cover and insect populations that provide GUSG brood rearing habitat.

**Potential Adverse Effect(s) to GUSG:** AE I: Physical disturbance (including noise) of birds. AE 6: Accidental mortality to individual GUSG.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 6: Plan and design placement of new fences away from occupied and historic leks. If this is not possible, NRCS will require that fences be adequately marked to increase visibility. Identify existing fences that are nearby to an occupied or historic lek and consider removing or relocating the fence to a site further from the lek. NRCS will require, at a minimum, marking all existing fences within 1/4 mile from an occupied or historic lek, or in areas where collisions are known to occur. Use escape ramps in all new and existing water facilities that occur in GUSG habitat. For haying operations, employ techniques to avoid or minimize mortality, such as flush bars, slower speeds and harvesting patterns that herd wildlife out of the hayland (e.g., from center to outside of field).

**CPS: Irrigation Water Management (449) (FACILITATING MANAGEMENT PRACTICE)**

**Definition:** The process of determining and controlling the volume, frequency and application rate of irrigation water in a planned, efficient manner.

**Purpose:** This practice, applied as a part of a resource management system, can produce forbs and insects for brood rearing and establishment of woody vegetation for GUSG.

**Resource concerns:** Insufficient infrastructure leads to poor brood and other GUSG habitat.

**Practice Application:** This facilitative management practice is anticipated to be implemented on an average of 2,400 acres, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
300	300	300	300	300	300	300	300

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Irrigated plantings increase cover and improve succulent forbs and insects for brood rearing habitat and sage brush for GUSG.

**Potential Adverse Effect(s) to GUSG:** AE 7: Increased potential for west Nile virus.

**Conservation Measures:**

CM 7: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the State Wildlife Agency and design practice to minimize or eliminate the threat of West Nile virus to the species.

**Conservation Practice Standards (CPS) – Facilitating Vegetative Practices**

**CPS: Brush Management (Conifer Removal) (314) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Conifer removal (individual tree removal) - Targeted conifers are removed by manual or mechanical means, such as chainsaws, feller bunchers, hydraulic sheers, or masticators. Cut trees can be left in place, lopped-and-scattered, piled-and-burned, chipped, or hauled off-site.

Conifer removal (chaining) - Conifer stands are removed by dragging an anchor chain across the site. Practice is typically done in stands in later successional stages of encroachment where sagebrush and other shrubs, grasses, and forbs are greatly reduced or absent (e.g., in Phases II and III, where trees are co-dominant or dominant with shrubs and herbs, and either the trees or all three layers influence ecological processes of the site.)

Purpose: This practice can be applied to create the desired plant community consistent with the ecological site, to improve forage accessibility, quality and quantity for livestock and wildlife, or to remove post-settlement aged conifers, such as juniper, that have encroached into shrub and grasslands to restore or improve GUSG habitats.

**Resource concerns:** Trees have expanded into shrub/grassland areas, increasing vertical structure on the landscape, affecting GUSG use and eventually resulting in loss of grasses, forbs, and shrubs (sagebrush) which reduces habitat suitability. Increased conifers on the landscape also increase the risk of predation by raptors and ravens.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of 850 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	0	500	100	100	150	0	0

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice can reduce vertical structure on the landscape, prevent loss of understory vegetation, and restore habitat suitability for GUSG. Practice may result in decreased risk of predation by raptors and ravens and increased amount/availability of suitable habitat. Practice may also improve groundwater recharge that enhances grass/forb production.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 5: Increased fire hazard.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2/3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 5: Woody slash shall be treated if significant build-up of fuels occurs (typically in phase II and III juniper treatments). Slash piles shall be burned when wildfire risk is low (usually when soils are frozen or saturated). Follow state forestry laws, when applicable, for treating slash to minimize wildfire risk.

**CPS: Conservation Cover (327) (FACULTATIVE VEGETATIVE PRACTICE)**

**Definition:** Establishing and maintaining permanent vegetative cover.

**Purpose:** This practice may be applied to reduce soil erosion and sedimentation, improve water quality, improve air quality, enhance wildlife habitat, improve soil quality, or manage plant pests. Practice is applied to agricultural lands in GUSG habitat to restore habitat and reduce fragmentation.

**Resource concerns:** Cropland fragments GUSG habitat, or current rangeland condition does not have desired beneficial species. Existing invasive or undesirable plants, which do not provide quality habitat, compete with desired plant species and necessitate active planting to restore habitat conditions.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of 66,500 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	0	500	31,000	35,000	0	0	0

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice reduces habitat fragmentation and can help restore desired diverse plant communities providing quality GUSG habitat. Practices provide diverse grass, forb and sagebrush communities beneficial to GUSG.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Conservation Crop Rotation (328) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Growing crops in a planned sequence on the same field.

**Purpose:** This practice may be applied to reduce sheet-and-rill or wind erosion, improve soil quality, manage the balance of plant nutrients, increase cropping system diversity, manage crop consumptive use of water, manage saline seeps, manage plant pests (weeds, insects, and diseases), provide food for domestic livestock, provide food and cover for wildlife, including pollinator forage, cover, and nesting. Where sage-grouse are using cropland, this practice is used to promote crops used by sage-grouse to meet breeding and brood-rearing requirements, especially when cropland is adjacent to quality native habitat or other cropland planted to native vegetation. In specific regions and in certain situations, establishment of selected crops can provide suitable vegetation for GUSG leks.

**Resource concerns:** Selected crops and crop management activities may not provide the appropriate cover required for use by GUSG.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of 40,000 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	0	0	5,000	35,000	0	0	0

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello,

CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice promotes use of cropland that in some cases has lek sites. Fields planted to wheat can create an area of short vegetation that is desirable to GUSG during early spring, especially when cropland is adjacent to quality native habitat or other cropland planted to native vegetation. Additionally, practice promotes use of cropland and hayland by GUSG as a food source, specifically insects found in alfalfa stands, during the brooding season. This is primarily the case when cropland is adjacent to quality native habitat or other cropland planted to native vegetation.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 6: Accidental mortality to individual GUSG.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 6: Plan and design placement of new fences away from occupied and historic leks. If this is not possible, NRCS will require that fences be adequately marked to increase visibility. Identify existing fences that are nearby to an occupied or historic lek and consider removing or relocating the fence to a site further from the lek. NRCS will require, at a minimum, marking all existing fences within 1/4 mile from an occupied or historic lek, or in areas where collisions are known to occur. Use escape ramps in all new and existing water facilities that occur in GUSG habitat. For haying operations, employ techniques to avoid or minimize mortality, such as flush bars, slower speeds and harvesting patterns that herd wildlife out of the hayland (e.g., from center to outside of field).

**CPS: Cover Crop (340) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Crops including grasses, legumes and forbs established for seasonal cover and other conservation purposes.

**Purpose:** This practice may be applied to reduce soil erosion from wind and water, increase soil organic matter content, capture and recycle or redistribute nutrients in the soil profile, promote biological nitrogen fixation, increase biodiversity, weed suppression, provide supplemental forage, soil moisture management, reduce particulate emissions into the atmosphere, minimize and reduce soil compaction, and to provide multi-species cover crops on cropland adjacent to sage-grouse nesting habitat for a full growing season or planted after small grain harvest to create and improve GUSG brood rearing habitat.

**Resource concerns:** Limited GUSG brood rearing habitat can reduce brood survival.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of x500 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	0	0	500	0	0	0	0

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Multi-species cover crops planted on cropland adjacent to GUSG nesting habitat for a full growing season or planted after small grain harvest can create and improve brood rearing habitat.

**Potential Adverse Effect(s) to GUSG:** AE I: Physical disturbance (including noise) of birds. AE 6: Accidental mortality to individual GUSG.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 6: Plan and design placement of new fences away from occupied and historic leks. If this is not possible, NRCS will require that fences be adequately marked to increase visibility. Identify existing fences that are nearby to an occupied or historic lek and consider removing or relocating the fence to a site further from the lek. NRCS will require, at a minimum, marking all existing fences within 1/4 mile from an occupied or historic lek, or in areas where collisions are known to occur. Use escape ramps in all new and existing water facilities that occur in GUSG habitat. For haying operations, employ techniques to avoid or minimize mortality, such as flush bars, slower speeds and harvesting patterns that herd wildlife out of the hayland (e.g., from center to outside of field).

**CPS: Critical Area Planting (342) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Establishing permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.

**Purpose:** This practice may be applied to stabilize areas with existing or expected high rates of soil erosion by water, stabilize areas with existing or expected high rates of soil erosion by wind, rehabilitate and re-vegetate degraded sites that cannot be stabilized through normal farming practices, stabilize coastal areas, such as sand dunes and riparian areas. Practice will improve GUSG habitat by establishing native and/or non-invasive vegetation in areas with disturbed soil from installation of other practices, such as grade stabilization structure.

**Resource concerns:** Un-vegetated, disturbed soil creates sites for invasive species to colonize, promotes increased soil erosion, and reduces wildlife and GUSG habitat quality.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of 600 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	0	100	500	0	0	0	0

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Establishing native and/or non-invasive vegetation in areas with disturbed soil will help stabilize soil to maintain newly installed conservation practice and reduce soil erosion. For example, maintaining grade structures will reduce channel down cutting and help reestablish natural flows that meander across the meadow instead of concentrating in the original channel or ditch locations. This restored meadow will provide forb and insect food resources.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site

conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Firebreak (394) (FACILITATING, VEGETATIVE PRACTICE)**

**Definition:** A permanent or temporary strip of bare or vegetated land established to retard fire. Existing vegetation is removed or manipulated by mechanical means, such as mowers or disks, to reduce fuel loads and promote fire-resistant plants or bare ground. Practice may require seeding of fire-resistant plants.

**Purpose:** This practice may be applied to reduce the spread of wildfire to prevent GUSG habitat loss, contain prescribed burns, and interrupt the feedback cycle of wildfire to invasive plants.

**Resource concerns:** Wildfires can result in small-scale or large-scale catastrophic GUSG habitat degradation or loss.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of 40 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Feet per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
5	5	5	5	5	5	5	5

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice can help reduce the spread of wildfires thus reducing the risk of large-scale, catastrophic habitat loss.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the

GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard’s where removal of sagebrush and associated understory vegetation is the objective.

**CPS: Forage & Biomass Planting (512) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Establishing native or introduced forage plant species.

**Purpose:** This practice may be applied to establish adapted and compatible species, varieties, or cultivars for forage production to improve or maintain livestock nutrition and/or health, balance forage supply and demand during periods of low forage production, reduce soil erosion and improve water quality, and increase carbon sequestration. In GUSG habitats, this practice is typically used to seed former croplands with perennial, productive, introduced grass/legume mixes to meet seasonal needs of livestock and lessen grazing demands on native rangeland habitats.

**Resource concerns:** Forage demand for livestock often exceeds sustainable forage production on native rangelands. Additionally, spring and fall forage is often limited in supply on native rangelands and overuse of native rangelands during these critical times of year lead to decreased residual cover, decreased range health, and may limit residual cover important for successful GUSG nesting. Scattered cropland units in GUSG habitats also increase fragmentation.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of 160 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
20	20	20	20	20	20	20	20
<sup>1</sup> Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass							

**Potential Beneficial Effect(s) to GUSG:** Plantings reduce fragmentation by conversion of cropland to grassland, increase available forage for livestock which remove grazing pressure from native rangelands and can lead to increased native range condition and increased residual cover important for nest success.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Herbaceous Weed Control (315) (FACILITATING VEGETATIVE PRACTICE**

**Definition:** The chemical, biological, or mechanical removal or control of herbaceous weeds including invasive, noxious and prohibited plants.

**Purpose:** This practice may be applied to control or remove invasive and noxious weeds in order to restore native or desired plant communities and habitat for GUSG consistent with the ecological site. It secondarily protects soils, controls erosion, reduces fine-fuels fire hazards, and improves air quality.

**Resource concerns:** Invasive and noxious weeds degrade ecological sites by increasing competition with native and desirable plant species, increasing soil erosion, reducing water quality, increasing fire frequency, etc. This results in decreased sustainability and resiliency of the ecological sites and leads to reduced habitat quality and quantity for wildlife, including GUSG.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of 30,700 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
1,000	17,000	500	1,000	10,000	500	500	200
<sup>1</sup> Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass							

**Potential Beneficial Effect(s) to GUSG:** Practice implementation removes or reduces invasive or other weed species that directly or indirectly limit Sage-grouse habitat improvement and productivity. Practice can beneficially influence the vigor and establishment of native or desirable vegetation required to provide GUSG habitat.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width.

NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard’s where removal of sagebrush and associated understory vegetation is the objective.

**CPS: Rangeland Planting (550) (FACULTATIVE VEGETATION PRACTICE)**

**Definition:** Establishment of adapted perennial or self-sustaining vegetation such as grasses, forbs, legumes, shrubs and trees.

**Purpose:** This practice may be applied to restore a plant community similar to the Ecological Site Description reference state for the site or the desired plant community. This planting may also provide or improve forages for livestock, provide or improve forage, browse or cover for wildlife, reduce erosion by wind and/or water, improve water quality and quantity, and increase carbon sequestration. In GUSG habitats, this practice can be used to restore important native habitats to meet all habitat requirements for GUSG.

**Resource concerns:** Cropland fragments GUSG habitat or current rangeland condition does not have desired species beneficial to sage-grouse. Invasive or undesirable plants do not provide needed sage-grouse habitat according to ecological site potential.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of 3,650 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	600	500	1,000	1,000	350	0	200

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice reduces habitat fragmentation and can help restore desired diverse plant communities providing quality sage-grouse habitat.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native

species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Riparian Herbaceous Cover (390) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Grasses, sedges, rushes, ferns, legumes, and forbs tolerant of intermittent flooding or saturated soils, established or managed as the dominant vegetation in the transitional zone between upland and aquatic habitats.

**Purpose:** This practice may be applied as to provide or improve food and cover for fish, wildlife and livestock, improve and maintain water quality, establish and maintain habitat corridors, increase water storage on floodplains, reduce erosion and improve stability to stream banks and shorelines, increase net carbon storage in the biomass and soil, enhance pollen, nectar, and nesting habitat for pollinators, restore, improve or maintain the desired plant communities, dissipate stream energy and trap sediment, and enhance stream bank protection as part of stream bank soil bio-engineering practices. Restoring the desired native wetland and aquatic vegetation will provide quality GUSG habitat.

**Resource concerns:** Riparian habitats that lack important functional groups and contain limited plant diversity often provide reduced food and cover for wildlife and GUSG.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of 160 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the goals of the NRCS GUSG conservation programs.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
20	20	20	20	20	20	20	20

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice can help restore desired diverse plant communities that provide quality sage-grouse habitat. Functional riparian habitats provide critical GUSG brood habitat with abundant forbs, legumes and associated insects.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by

utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Woody Residue Treatment (384) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Woody plant slash or debris generated as a by-product of a management activity, such as conifer removal, is removed, reduced, or otherwise treated to limit fuel loads on site and to promote regeneration of remaining plant community. Slash treatment methods typically include pile-and-burn, chipping, lop-and-scatter, removal, crushing, or mulching.

**Purpose:** This practice can be applied to reduce risk of wildfire and prevent sage-grouse habitat loss, remove or reduce predator perches and cover, and to release and promote understory grasses, forbs, and sagebrush.

**Resource concerns:** Cut trees left in shrub/grasslands can provide increased vertical structure increasing the risk of predation by raptors and ravens. Slash on the landscape can also result in loss of grasses, forbs, and sagebrush, reducing habitat suitability for GUSG.

**Practice Application:** This vegetative practice is anticipated to be implemented on an average of 40 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the goals of the NRCS GUSG conservation programs.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
5	5	5	5	5	5	5	5

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Using this practice can reduce vertical structure on the landscape, release and promote understory vegetation, and restore habitat suitability for GUSG. Implementing this practice may also result in a decreased risk of predation by raptors and ravens and increased amount/availability of suitable habitat. Practice can also reduce the risk of wildfire.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 5: Increased fire hazard.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 5: Woody slash shall be treated if significant build-up of fuels occurs (typically in phase II and III juniper treatments). Slash piles shall be burned when wildfire risk is low (usually when soils are frozen or saturated). Follow state forestry laws, when applicable, for treating slash to minimize wildfire risk.

**Conservation Practice Standards (CPS) – Facilitating Structural Practices**

**CPS: Fence (382) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A constructed barrier to animals or people.

**Purpose:** This practice may be applied to facilitate the accomplishment of conservation objectives by providing a means to control movement of animals and people, including vehicles. Practice can benefit GUSG habitat by facilitating the implementation of the prescribed grazing practice to improve rangeland health, increase residual cover, and ensure sustainability of rangeland resource. Additionally, the practice can be used for the relocation of existing fences located in areas of known or suspected GUSG collisions.

**Resource concerns:** Insufficient infrastructure (fences and livestock water) limits grazing rotation options resulting in limited livestock distribution and over/under utilization of forage and decreased range health. Limited infrastructure greatly restricts the ability of land managers to manage livestock in a way that promotes rangeland sustainability and improved wildlife and sage-grouse habitat. Additionally, practice can be an effective tool for managing wild and domestic animal disturbance to GUSG habitat or reseeded or reclaimed sites.

**Practice Application:** This facilitative structural practice is anticipated to be implemented on an average of 57,500 feet of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Feet per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
2,000	28,000	5,000	15,000	2,500	0	0	5,000

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Accidental mortality resulting from collisions can be reduced by removing existing fences and constructing to sites where collisions are less likely (e.g. away from leks and sage-grouse wintering areas). Fragmentation of habitat caused by fencing will be reduced by relocating fences to less sensitive sites.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 6: Accidental mortality

to individual sage-grouse. AE 8: increased potential for predation. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

### **Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective.

CM 6: Plan and design placement of new fences away from occupied and historic leks. If this is not possible, NRCS will require that fences be adequately marked to increase visibility. Identify existing fences that are nearby to an occupied or historic lek and consider removing or relocating the fence to a site further from the lek. NRCS will require, at a minimum, marking all existing fences within 1/4 mile from an occupied or historic lek, or in areas where collisions are known to occur. Use escape ramps in all new and existing water facilities that occur in GUSG habitat. For haying operations, employ techniques to avoid or minimize mortality, such as flush bars, slower speeds and harvesting patterns that herd wildlife out of the hayland (e.g., from center to outside of field).

CM 8: Minimize to the extent possible the removal of existing vegetation when installing practice. Whenever possible when installing fence, use T-posts or cones on posts to reduce perching opportunities for avian predators. Avoid leaving trash or brush piles that could provide cover for predator species. Powerlines should be buried whenever possible or use solar systems to supply required power needs.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

### **CPS: Structure for Wildlife (649) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A structure designed and implemented specifically for fish or wildlife.

**Purpose:** This practice can be a part of a fish or wildlife habitat management plan to serve one or more of the following functions: (a) Provide structure for loafing, escape, nesting, rearing, roosting, perching, or basking; (b)

Provide an escape, avoidance, or exclusionary feature from otherwise life-threatening conditions; (c) Provide alternative cover when natural cover is not readily available. (d) Isolate native species populations from non-natives; (e) Improve or restore habitat connectivity; (f) Reduce the spread of wildfire; and (g) Contain prescribed burns. This practice can be applied to minimize accidental mortality to GUSG resulting from livestock watering facilities and fences, to improve overall habitat conditions.

**Resource concerns:** Certain wildlife species, including GUSG, may enter and utilize water structures and be unable to exit or can be seriously injured by collisions with fences and other structures.

**Practice Application:** This facilitative structural practice is anticipated to be implemented on an average of 400 each, per a five year period, throughout the Action Area as indicated in the table below.

- Please note that this is a new NRCS practice, so the anticipated usage is not based on past use but is instead based on the goals of the NRCS GUSG conservation programs.

**Average Anticipated Usage:**

Total Number per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
50	50	50	50	50	50	50	50

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** This wholly beneficial practice can minimize risk of wildlife injury or death associated with fences (fence markers) and livestock watering facilities (wildlife escape ramps).

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

**CPS: Grade Stabilization Structure (410) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A structure used to control the grade and head cutting in natural or artificial channels. The water table in incised channels and ditches will be elevated using a variety of approaches to reestablish the natural hydrology of these wet meadows. The practice may include one or more of the following: (1) depositing and compacting appropriate fill material (soil) into these incised channels; (2) installation of hard structure (plastic sheet pile, rock or gabion structures) that extend out 30' perpendicular to the channel, at intervals every one foot drop in grade to maintain the integrity of the filled channel; (3) planting of native or natural vegetation at structure placement to reinforce hard structure with above ground and root structure of these sedges, rushes and grasses.

**Purpose:** This practice may be applied to stabilize the grade and control erosion in natural or artificial channels, to prevent the formation or advance of gullies, and to enhance environmental quality and reduce pollution hazards. Maintaining or restoring hydrology to these sites is important for GUSG brood rearing habitat.

**Resource concerns:** Altered hydrology in mesic sites often results in reduced water tables, reduced vegetative production, reduced forb and legume abundance, and subsequent reduction in insect production. These factors contribute to decreased brood rearing habitat for GUSG.

**Practice Application:** This facilitative structural practice is anticipated to be implemented on an average of 8 each, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Number per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
1	1	1	1	1	1	1	1

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice can maintain or restore hydrology of swales, coulees, and riparian sites that are important for brood rearing habitat.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Livestock Pipeline (516) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** Small pipeline having an inside diameter of 8 inches or less.

**Purpose:** This practice, applied as a part of a resource management system, can convey water from a source of supply to points of use for livestock, wildlife, or recreation. Typically this involves conveyance from a spring development or well to a livestock watering facility. Pipelines are commonly implemented underground at depths ranging from 18" to 6' depending on use (winter vs. non-winter).The primary purpose is to facilitate a livestock grazing management plan developed to improve rangeland sustainability and GUSG habitat.

**Resource concerns:** Insufficient infrastructure (livestock water) limits grazing rotation options resulting in limited livestock distribution and over/under utilization of forage and decreased range health. Additionally, current water sources may concentrate livestock on important wildlife habitats, reducing the quality. Limited stock water greatly restricts the ability of land managers to manage livestock in a way that promotes rangeland sustainability and improved wildlife and GUSG habitat.

**Practice Application:** This facilitative structural practice is anticipated to be implemented on an average of 45,000 feet, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Feet per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
5,000	10,000	10,000	5,000	0	5,000	5,000	5,000

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice can facilitate livestock grazing management to improve rangeland sustainability and improve GUSG habitat quality.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Obstruction Removal (500) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** Removal and disposal of buildings, structures, other works of improvement, vegetation, debris or other materials.

**Purpose:** This practice may be applied to remove and dispose of unwanted obstructions in order to apply conservation practices or facilitate the planned land use and decrease availability of predator nests, dens, and perches. Removal of structures and other obstructions can benefit GUSG by decreasing opportunities for predation and accidental mortality due to collisions.

**Resource concerns:** Structures, including buildings and fences can provide predator perches and nesting sites and can increase predation rates for wildlife including sage-grouse and may cause wildlife to decrease use of otherwise suitable habitats. Additionally, these structures can cause accidental mortality for GUSG from collisions.

**Practice Application:** This facilitative structural practice is anticipated to be implemented on an average of 60 acre of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	50	0	0	0	0	0	10

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice will benefit sage-grouse by removing unnecessary fences that contribute to fragmentation and direct mortality due to collisions, removing unwanted on farm power lines or infrastructure that provides corvid/raptor perches, and removing structures that serve as mammalian predator habitat and/or visual/psychological obstructions that cause GUSG to partially or completely abandon otherwise suitable habitat.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

**CPS: Pumping Plant (533) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A facility that delivers water at a designed pressure and flow rate that includes the required pump(s), associated power unit(s), plumbing, appurtenances, and sometimes on-site fuel or energy source(s) and protective structures.

**Purpose:** This practice, applied as a part of a resource management system, can achieve one or more of the following: 1) Delivery of water to livestock watering facilities to facilitate livestock management in a way that promotes rangeland sustainability and improved wildlife and GUSG habitat; 2) This practice provides water in areas of limited brood-rearing habitat.

**Resource concerns:** Insufficient infrastructure (livestock water) limits grazing rotation options resulting in limited livestock distribution and over/under utilization of forage and decreased range health. Additionally, current water sources may concentrate livestock on important wildlife habitats, reducing the quality. Limited stock water greatly restricts the ability of land managers to manage livestock in a way that promotes rangeland sustainability and improved wildlife and GUSG habitat.

**Practice Application:** This facilitative structural practice is anticipated to be implemented on an average of 6 each, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Number per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	5	0	0	0	0	0	1

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Irrigated plantings can increase cover and improve succulent forbs and insects for brood rearing habitat. Practice can facilitate improved livestock grazing management and can provide water for GUSG and other wildlife.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Road/Trail/Landing Closure & Treatment (654) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** The closure, decommissioning, or abandonment of roads, trails, and/or landings and associated treatment to achieve conservation objectives.

**Purpose:** To minimize various resource concerns associated with existing roads, trails, and/or landings by closing them and treating to a level where one or more of the following objectives are achieved: (a) Controlling erosion, chemical residues, sediment deposition and damage, accentuated storm runoff, and particulate matter generation; (b) Restoring land to a productive state by reestablishing adapted plants and habitat (wildlife food, cover, and shelter), reconnecting wildlife habitat and migration corridors including streams and riparian areas, and controlling noxious and invasive species; (c) Reestablishing drainage patterns that existed prior to construction of the road, trail, or landing to restore the form and integrity of associated hill slopes, channels and floodplains and (d) minimizing human impacts to the closure area to meet safety, aesthetic, or wildlife habitat requirements. This practice can be used to decommission roads and restore areas to historic conditions when in important GUSG habitats, or to remove temporary roads needed for habitat restoration purposes.

**Resource concerns:** GUSG habitat can be fragmented by roads and trail ways, furthering invasive plant spread, habitat degradation and loss.

**Practice Application:** This facilitative structural practice is anticipated to be implemented on an average of 8,000 each, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the goals of the NRCS GUSG conservation programs.

**Average Anticipated Usage:**

Total Feet per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice can be used to close and reclaim roads that are no longer needed/wanted, thus reducing fragmentation of GUSG habitat.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

**CPS: Spring Development (574) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** Collection of water from springs or seeps to provide water for a conservation need.

**Purpose:** This practice will be applied to improve the quantity and/or quality of water for livestock, wildlife or other agricultural uses, which can improve mesic habitat quality for sage-grouse and broods. Natural springs are commonly developed to provide a clean source of water for livestock. In addition to providing water for livestock, the development of springs protects the spring source from degradation caused by unrestricted livestock use. The actual development of the spring includes installation of a "spring box" to filter and collect water to be delivered via pipeline to livestock. Pipeline flow is achieved by gravity or pumping conditions.

**Resource concerns:** Insufficient infrastructure (livestock water) limits grazing rotation options resulting in limited livestock distribution and over/under utilization of forage and decreased range health. Additionally, current water sources may concentrate livestock on important wildlife habitats, reducing the quality. Limited stock water greatly restricts the ability of land managers to manage livestock in a way that promotes rangeland sustainability and improved wildlife and GUSG habitat.

**Practice Application:** This facilitative structural practice is anticipated to be implemented on an average of 16 each, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Number per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	5	5	5	0	0	0	1

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Use of this practice to create infrastructure (livestock water) offers a clean source of water for livestock and can protect the spring from degradation caused by improper grazing use.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Water Well (642) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A hole drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer.

**Purpose:** Provide water for livestock, wildlife, irrigation, human, and other uses. Provide for general water needs of farming/ranching operations. Facilitate proper use of vegetation on rangeland, pastures and wildlife areas, which can provide water in areas of limited brood-rearing habitat.

**Resource concerns:** Insufficient infrastructure (livestock water) limits grazing rotation options resulting in limited livestock distribution and over/under utilization of forage and decreased range health. Additionally, current water sources may concentrate livestock on important wildlife habitats, reducing the quality. Limited stock water greatly restricts the ability of land managers to manage livestock in a way that promotes rangeland sustainability and improved wildlife and GUSG habitat.

**Practice Application:** This facilitative structural practice is anticipated to be implemented on an average of 12 each, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Number per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
1	3	3	1	1	1	1	1

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice can facilitate improved livestock grazing management and can provide water for GUSG where brood habitat is limited.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**CPS: Watering Facility (614) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A permanent or portable device to provide an adequate amount and quality of drinking water for livestock and or wildlife.

**Purpose:** This practice will be applied to facilitate livestock grazing management and provide access to drinking water for livestock and/or wildlife in order to meet daily water requirements and improve animal distribution to conserve or enhance important sage-grouse habitat. Watering facilities are commonly designed/implemented to provide adequate livestock water. Commonly used watering facilities are constructed from concrete, fiberglass, metal, or rubber tires. Each tank is typically fed by a pipeline and also contains an overflow for excess water. Winter tanks are routinely buried or covered to prevent freezing and have small drinking areas exposed. Wooden cross-fence is often implemented to prevent livestock entry into tanks and to protect the plumbing associated with the facility.

**Resource concerns:** Insufficient infrastructure (livestock water) limits grazing rotation options resulting in limited livestock distribution and over/under utilization of forage and decreased range health. Additionally, current water sources may concentrate livestock on important wildlife habitats, reducing the quality. Limited stock water greatly restricts the ability of land managers to manage livestock in a way that promotes rangeland sustainability and improved wildlife and GUSG habitat.

**Practice Application:** This facilitative structural practice is anticipated to be implemented on an average of 66 each, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Number per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
5	20	15	10	1	5	5	5

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Use of this practice can facilitate improved livestock grazing management and can provide water for GUSG and other wildlife.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 7: Increased potential for west Nile virus. AE 10: Practice implementation in isolation without concurrent management prescribed to address sage-grouse habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective.

CM 7: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the State Wildlife Agency and design practice to minimize or eliminate the threat of West Nile virus to the species.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Conservation Practice Standards (CPS) – Limited Use Practices**

**Limited Use CPS: Access Road (560) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** Construction of a travel-way for equipment and vehicles.

**Purpose:** This practice can provide a fixed route for vehicular travel for resource activities involving ranch and farm management, while protecting the soil, water, air, fish, wildlife, and other adjacent natural resources. Use of the practice in conjunction with road closure conservation practice can replace existing roads to areas outside of important GUSG habitats (such as leks).

**Resource concerns:** GUSG habitat can be fragmented by roads and trail ways, furthering invasive plant spread, habitat degradation and loss.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 800 feet, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Feet per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
100	100	100	100	100	100	100	100

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Reducing conflicts with sage-grouse if used in conjunction with road closure to ensure proper ranching use while keeping vehicular traffic away from important GUSG habitats.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 8: Increased potential for predation. AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be

clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective.

CM 8: Minimize to the extent possible the removal of existing vegetation when installing practice. Whenever possible when installing fence, use T-posts or cones on posts to reduce perching opportunities for avian predators. Avoid leaving trash or brush piles that could provide cover for predator species. Powerlines should be buried whenever possible or use solar systems to supply required power needs.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Brush Management (non-conifer) (314) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** The management or removal of woody (non-herbaceous) plants, including sagebrush.

**Purpose:** This practice may be applied to create the desired plant community phase consistent with the ecological site description and preferable to sage-grouse.

**Resource concerns:** Sagebrush range sites lacking diversity and if comprised of monotypic stands of brush species limit the availability of understory vegetation (forbs, legumes, and grasses) limiting both sage-grouse habitat and livestock forage. These monotypic stands are modified by creating a mosaic of small, irregular shaped openings to increase diversity. Typical means to create the mosaic include Tebuthiron application and mowing.

**Practice Application:** This limited use, facilitative vegetative practice is anticipated to be implemented on an average of 850 acres, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	200	500	50	100	0	0	0

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Opening up sagebrush canopy in monotypic stands by creating a mosaic of small, irregular shaped openings to increase diversity and create early brood rearing habitat by increasing forbs and legumes to improve insect populations and succulent forbs, needed by GUSG in early life stages. Nesting habitat is also improved by increasing the understory vegetation.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 9: identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address sage-grouse habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Diversion (362) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A channel generally constructed across the slope with a supporting ridge on the lower side.

**Purpose:** This practice may be applied to support one or more of the following purposes.(A) Break up concentrations of water on long slopes, on undulating land surfaces, and on land that is generally considered too flat or irregular for terracing. (B) Collect or direct water for storage, water-spreading or water-harvesting systems. (C) Intercept surface and shallow subsurface flow. (D) Reduce runoff damages from upland runoff. (E) Divert water away from active gullies or critically eroding areas.

**Resource Concerns:** Important GUSG sites may need protection from gully erosion or may benefit from diverting water to a site for improved plant productivity.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 800 feet, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Feet per Gunnison Sage-Grouse Population Unit <sup>1)</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP

100	100	100	100	100	100	100	100
<sup>1</sup> Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass							

**Potential Beneficial Effect(s) to GUSG:** Use of this can protect important GUSG habitats from runoff damage or may be used to divert water to a site for improved plant productivity.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 9: identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address sage-grouse habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Grazing Land Mechanical Treatment (548) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Modifying physical soil and/or plant conditions with mechanical tools by treatments such as pitting, contour furrowing, ripping, chiseling, or sub-soiling.

**Purpose:** To establish conditions where the desired plant community phase, consistent with the ecological site description, can re-establish on a degraded ecological site by a) Fracturing compacted soil layers and improve soil permeability, b) Reducing water runoff and increase infiltration, c) Breaking up sod-bound conditions and thatch to increase plant vigor, and d) Renovating and stimulating the soil and plant community for greater productivity and yield.

**Resource concerns:** Degraded ecological sites that have restrictive soil and vegetation layers prevent natural re-colonization of the desired plant community. This results in reduced amounts of understory vegetation (forbs, legumes, grasses) that are important for ecological processes, robust GUSG habitat, and livestock forage.

**Practice Application:** This limited use, facilitative vegetative practice is anticipated to be implemented on an average of 41,100 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
100	100	0	5,000	35,000	800	0	100

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Use of this practice can remove restricted soil layers and reduce invasive or other plant species that directly or indirectly limit GUSG habitat improvement and productivity. Practice can beneficially alter the height, density, vigor, and seedling establishment of sagebrush and other desired understory plant species.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address sage-grouse habitat needs, can result in a reduction of sage-grouse habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Heavy Use Area Protection (561) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** The stabilization of areas frequently and intensively used by people, animals or vehicles by establishing vegetative cover, surfacing with suitable materials, and/or installing needed structures.

**Purpose:** This practice may be applied to: (A) Provide a stable, non-eroding surface for areas frequently used by animals, people or vehicles. (B) Protect and improve water quality.

**Resource Concerns:** Soil erosion along streambanks and water quality degradation from excessive sediment and turbidity may result in areas around livestock watering facilities, at water gaps used to water livestock, and at stream crossings. The end result may be bank erosion and excessive sediment in surface waters. Important GuSG sites may need protection from gully erosion.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 55 acres of land per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
5	20	15	10	0	0	0	5

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Use of this can protect important GUSG habitats from erosion damage or damage by sedimentation.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. . AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address sage-grouse habitat needs, can result in a reduction of sage-grouse habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice

applicability, location, extent, configuration, and timing in conservation practice standard’s where removal of sagebrush and associated understory vegetation is the objective.

CM 9: Where the particular “limited use” conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Irrigation Field Ditch Irrigation System (388) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A permanent irrigation ditch constructed in or with earth materials, to convey water from the source of supply to a field or fields in an irrigation system.

**Purpose:** This practice, applied as a part of a resource management GUSG.

**Resource concerns:** Insufficient infrastructure leads to poor brood and other GUSG habitat.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 8,000 feet, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Feet per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Irrigated plantings increase cover and improve succulent forbs and insects for brood rearing habitat and sage brush for GUSG.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 7: Increased potential for west Nile virus. AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and

NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective.

CM 7: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the State Wildlife Agency and design practice to minimize or eliminate the threat of West Nile virus to the species.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Irrigation System, Micro Irrigation (441) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** Drip irrigation system.

**Purpose:** This practice, applied as a part of a resource management system, can achieve improvements in water conservation, and can facilitate woody and herbaceous plantings for GUSG.

**Resource concerns:** Insufficient infrastructure leads to unproductive and improper mix of vegetation, leading to poor GUSG habitat.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 8 each, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Number/Acre per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
1	1	1	1	1	1	1	1

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Irrigated plantings increases cover and improvements in vegetation by producing succulent forbs and insects for brood rearing habitat. Practice can facilitate improved livestock grazing management and can provide water for GUSG and other wildlife.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 7: Increased potential for west Nile virus. AE 9: Identified as a "limited use" practice. AE I 0: Practice implementation in isolation without concurrent grazing management prescribed to address sage-grouse habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 7: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the State Wildlife Agency and design practice to minimize or eliminate the threat of West Nile virus to the species.

CM 9: Where the particular “limited use” conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Irrigation System, Sprinkler (442) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** Sprinkler - not to include center pivot or wheel lines.

**Purpose:** This practice, applied as a part of a resource management system, can improve production of forbs and insects for brood rearing and establishment of woody vegetation for GUSG.

**Resource concerns:** Insufficient infrastructure leads to unproductive and improper mix of vegetation, leading to poor GUSG habitat.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 6 each, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Number/Acre per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
3	0	0	0	3	0	0	0

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Irrigated plantings increase cover and improve succulent forbs and insects for brood rearing habitat and sage brush for GUSG.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 7: Increased potential for west Nile virus. AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 7: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the State Wildlife Agency and design practice to minimize or eliminate the threat of West Nile virus to the species.

CM 9: Where the particular “limited use” conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Irrigation System, Surface and Subsurface (443) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A system in which all necessary water-control structures have been implemented for the efficient distribution of water by surface means, such as furrows, borders, contour levees, or contour ditches, or by subsurface means.

**Purpose:** This practice, applied as a part of a resource management system, can improve production of forbs and insects for brood rearing and establishment of woody vegetation for GUSG.

**Resource concerns:** Insufficient infrastructure leads to unproductive and improper mix of vegetation, leading to poor GUSG habitat.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 40 each, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Number/Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
5	5	5	5	5	5	5	5

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Irrigation of plantings increases cover and improvements in vegetation by producing succulent forbs and insects for brood rearing habitat, which can facilitate improved livestock grazing management and can provide water for GUSG and other wildlife.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 7: Increased potential for west Nile virus. AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 7: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the State Wildlife Agency and design practice to minimize or eliminate the threat of West Nile virus to the species.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Irrigation Water Conveyance-Pipeline (430AA-GG) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** Pipes water to sprinklers and used in association with other irrigation system practices such as Irrigation System - Sprinkler (442)

**Purpose:** This practice, applied as a part of a resource management system, can improve water conservation, facilitate sagebrush and herbaceous plantings for grouse, or reduce risk of WNV by replacing flood irrigation systems with alternate systems, and improve production of forbs and insects for brood rearing to improve production.

**Resource concerns:** Insufficient infrastructure leads to poor brood habitat, possible disease, degraded upland habitat conditions.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 16,000 feet, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Feet per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Irrigated plantings increase cover and improve succulent forbs and insects for brood rearing habitat, reduced risk of WNV, improved upland habitat conditions, improved riparian condition due to water conservation.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 7: Increased potential for west Nile virus. AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal

vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective.

CM 7: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the State Wildlife Agency and design practice to minimize or eliminate the threat of West Nile virus to the species.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Pond (378) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A water impoundment made by constructing an embankment or by excavating a pit or dug out to provide water for livestock and/or wildlife.

**Purpose:** This practice will be applied to facilitate livestock grazing management and provide access to drinking water for livestock and/or wildlife in order to meet daily water requirements and improve animal distribution to conserve or enhance important GUSG habitat.

**Resource concerns:** Insufficient infrastructure (livestock water) limits grazing rotation options resulting in limited livestock distribution and over/under utilization of forage and decreased range health. Additionally, current water sources may concentrate livestock on important wildlife habitats, reducing the quality. Limited stock water greatly restricts the ability of land managers to manage livestock in a way that promotes rangeland sustainability and improved wildlife and GUSG habitat.

**Practice Application:**

**Average Anticipated Usage:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 1 each, per a five year period, throughout the Action Area as indicated in the table below.

Total Number per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	0	0	0	1	0	0	0

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Use of this practice can facilitate improved livestock grazing management and can provide water for GUSG and other wildlife.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 7: Increased potential for west Nile virus. AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by

utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard’s where removal of sagebrush and associated understory vegetation is the objective.

CM 7: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the State Wildlife Agency and design practice to minimize or eliminate the threat of West Nile virus to the species.

CM 9: Where the particular “limited use” conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Prescribed Burning (338) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Controlled fire applied to a predetermined area.

**Purpose:** This practice may be applied to create the desired plant community phase consistent with the ecological site description that is preferable to GUSG.

**Resource concerns:** Sagebrush range sites lacking diversity and comprised of monotypic stands of brush species limit the availability of understory vegetation (forbs, legumes and grasses) limiting GUSG habitat and livestock forage.

**Practice Application:** This limited use, facilitative vegetative practice is anticipated to be implemented on an average of 80 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
10	10	10	10	10	10	10	10

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Opening up sagebrush canopy in monotypic stands by establishing a mosaic of small, irregular shaped openings to increase diversity creates early brood rearing habitat by increasing

forbs and legumes, which improves insect populations and succulent forbs needed by GUSG in early life stages. Nesting habitat is also improved by increasing the understory vegetation.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 8: Increased potential for predation. AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent grazing management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 8: Minimize to the extent possible the removal of existing vegetation when installing practice. Whenever possible when installing fence, use T-posts or cones on posts to reduce perching opportunities for avian predators. Avoid leaving trash or brush piles that could provide cover for predator species. Powerlines should be buried whenever possible or use solar systems to supply required power needs.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Stream Crossing (578) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A stabilized area or structure constructed across a stream to provide a travel way for people, livestock, equipment, or vehicles.

**Purpose:** This practice may be used to: (A) Provide access to another land unit. (B) Improve water quality by reducing sediment, nutrient, organic, and inorganic loading of the stream. (C) Reduce stream bank and streambed erosion.

**Resource Concerns:** Excessive bank erosion and water quality degradation from pathogens and sediment in surface water may result when livestock and/or humans have unrestricted access to stream banks and stream beds for their crossing areas.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 11 each, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Number per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
0	0	3	5	0	0	0	3

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Use of this practice can facilitate improved livestock grazing management and can provide water for GUSG and other wildlife.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

CM 10: To benefit the quality of GUSG habitat, the core practice Upland Wildlife Habitat Management (code 645) shall be used to design, implement and install the other Facilitating practice standards to ensure that GUSG habitat is maintained or improved following application.

**Limited Use CPS: Structure for Water Control (587) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** A structure in a water management system that conveys water, controls the direction or rate of flow, maintains a desired water surface elevation or measures water.

**Purpose:** This practice may be applied as a component of a water management system to control the stage, discharge, distribution, delivery or direction of water flow.

**Resource Concerns:** Altered hydrology in mesic sites often results in reduced water tables, reduced vegetative production, reduced forb and legume abundance, and subsequent reduction in insect production. These factors contribute to decreased brood rearing habitat for GUSG.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 35 each, per a five year period, throughout the Action Area as indicated in the table below.

**Average Anticipated Usage:**

Total Number per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
5	5	5	5	0	5	5	5

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Can be used to irrigate areas to increase cover and improve succulent forbs and insects for brood rearing habitat and sage brush for GUSG.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 7: Increased potential for west Nile virus. AE 9: Identified as a "limited use" practice. AE 10: Practice implementation in isolation without concurrent management prescribed to address GUSG habitat needs, can result in a reduction of GUSG habitat quality.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 7: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the State Wildlife Agency and design practice to minimize or eliminate the threat of West Nile virus to the species.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

**Limited Use CPS: Tree/Shrub Establishment (612) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Establishing woody plants by planting seedlings or cuttings, direct seeding, or natural regeneration.

**Purpose:** This practice may be used to establish woody plants for: (A) Wildlife habitat. (B) Improving or restoring natural diversity.

**Resource Concerns:** Inadequate food and cover for GUSG may result when sagebrush quantity or quality is lacking.

**Practice Application:** This limited use, facilitative vegetative practice is anticipated to be implemented on an average 40 acres of land, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Acres per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
5	5	5	5	5	5	5	5

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice can improve inadequate food and cover for GUSG.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds AE 8: Increased potential for predation. AE 9: Identified as a "limited use" practice.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 8: Minimize to the extent possible the removal of existing vegetation when installing practice. Whenever possible when installing fence, use T-posts or cones on posts to reduce perching opportunities for avian predators. Avoid leaving trash or brush piles that could provide cover for predator species. Powerlines should be buried whenever possible or use solar systems to supply required power needs.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

**Limited Use CPS: Water and Sediment Control Basin (638) (FACILITATING STRUCTURAL PRACTICE)**

**Definition:** An earth embankment or a combination ridge and channel constructed across the slope of minor watercourses to form a sediment trap and water detention basin with a stable outlet.

**Purpose:** This practice may be applied for one or more of the following purposes: (A) To reduce watercourse and gully erosion. (B) To trap sediment. (C) To reduce and manage onsite and downstream runoff.

**Resource Concerns:** Excessive sediment in surface water may lead to degraded irrigation water, which in turn leads to decreased hay and insect production on the fields where the water is applied. Habitat may also be degraded from gully erosion.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 3 each, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Number per Gunnison Sage-Grouse Population Unit <sup>1</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
1	0	0	1	1	0	0	0

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Use of this can protect important GUSG habitats from runoff damage or by sedimentation.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 2: Temporary soil and vegetation disturbances. AE 3: Increased potential for invasive plants. AE 4: Removing sagebrush and understory vegetation during implementation of the conservation practice standard. AE 7: Increased potential for west Nile virus. AE 9: Identified as a "limited use" practice.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 2, 3: Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices by utilizing soil erosion protection measures. When needed, the reclamation strategy will be designed for local site conditions using the site-specific Ecological Site Descriptions (ESD) and will address the specific needs of the GUSG as practicable. Native species will be used whenever possible to meet practice objectives with preference to shrubs, forbs, grasses and grass-like plants preferred by GUSG, as well as those plants that reflect the potential of the specific ESD to optimize GUSG habitat. Tree species should not be planted. When non-native species are necessary to stabilize disturbed areas, avoid the use of plants identified as either invasive or aggressive. All seed mixes should be State-certified weed free. Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Wildlife Agency recommendations. Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species. Newly seeded/planted sites should be rested from livestock grazing for an appropriate period as determined by NRCS to ensure stand establishment.

CM 4: Design conservation practice standard to minimize or avoid loss of sagebrush during practice installation. For linear practices, limit removal of sagebrush to one side of disturbance and to only the width of removal vehicle. If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width. NRCS shall coordinate with the State Wildlife Agency to determine overall practice applicability, location, extent, configuration, and timing in conservation practice standard's where removal of sagebrush and associated understory vegetation is the objective.

CM 7: Where a conservation practice standard involves the creation of an open water source, excluding livestock watering tanks, follow recommendations from the State Wildlife Agency and design practice to minimize or eliminate the threat of West Nile virus to the species.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

**Limited Use CPS: Windbreak/Shelterbelt Establishment (380) (FACILITATING VEGETATIVE PRACTICE)**

**Definition:** Windbreaks or shelterbelts are single or multiple rows of trees or shrubs in linear configurations.

**Purpose:** This practice may be applied to reduce soil erosion from wind, protect plants from wind related damage, alter the microenvironment for enhancing plant growth, manage snow deposition, provide shelter for structures, animals, and people, provide noise screens, provide visual screens, improve air quality by reducing and intercepting air borne particulate matter, chemicals and odors. It can delineate property and field boundaries, improve irrigation efficiency, and increase carbon storage in biomass and soils. It also can provide important tree and shrub vegetative cover outside of GUSG habitat for wintering/feeding livestock.

**Resource concerns:** Wintering/feeding livestock on native range can degrade or destroy sage-brush that provides GUSG habitat.

**Practice Application:** This limited use, facilitative structural practice is anticipated to be implemented on an average of 200 feet, per a five year period, throughout the Action Area as indicated in the table below.

- This practice has not been used in the recent past, so the anticipated usage is not based on past use but is instead based on the forecasted incidental use.

**Average Anticipated Usage:**

Total Feet per Gunnison Sage-Grouse Population Unit <sup>1]</sup>							
SM	GB	PM	DC	MT	CR	CSC-SM	PP
25	25	25	25	25	25	25	25

<sup>1</sup>Endnotes: SM=San Miguel, GB=Gunnison Basin, PM=Pinon Mesa, DC=Dove Creek, MT=Monticello, CR=Crawford, CS-C-SM=Cerro Summit-Cimarron-Sims Mesa; PP=Poncha Pass

**Potential Beneficial Effect(s) to GUSG:** Practice can remove livestock from sage brush habitat by providing shelter for wintering livestock on cropland or other non-sage brush habitat.

**Potential Adverse Effect(s) to GUSG:** AE 1: Physical disturbance (including noise) of birds. AE 8: Increased potential for predation. AE 9: Identified as a "limited use" practice.

**Conservation Measures:**

CM 1: NRCS shall coordinate with the various State Wildlife Agencies to identify appropriate restrictions on the placement, extent, configuration, and timing of conservation practice standards and the area where these practice restrictions would apply; so as to avoid or minimize physical disturbance to GUSG where they may occur.

CM 8: Minimize to the extent possible the removal of existing vegetation when installing practice. Whenever possible when installing fence, use T-posts or cones on posts to reduce perching opportunities for avian predators. Avoid leaving trash or brush piles that could provide cover for predator species. Powerlines should be buried whenever possible or use solar systems to supply required power needs.

CM 9: Where the particular "limited use" conservation practice standard is planned, NRCS shall coordinate with state wildlife agency to develop and implement site-specific guidelines to determine practice applicability, location, extent, configuration, and timing to reduce risk to GUSG and their habitats.

#### Appendix 4: Coordination with State Wildlife Agencies

NRCS and the Service agree that additional details are needed to further clarify the process upon which NRCS will engage the local affected State Wildlife Agency(ies) (and seek additional assistance from the Service) associated with implementation of Conservation Measure #1 and Conservation Measure #2 for covered conservation practices.

NOTE: If the specific performance detailed below cannot be implemented or are not feasible for a particular project or property, NRCS will engage in further coordination with the State agency biologists and the Service to identify and apply avoidance and minimization measures sufficient to ensure that the suitability and functionality of leks are maintained and ensure that impacts on birds and seasonal habitats are avoided or minimized. Vegetation composition, structure, and spatial configuration that, collectively, comprise lek habitats will be considered in these evaluations.

**The specific performance requirements will consist of:**

- (A) Avoiding fence and road construction, and other surface disturbance (mechanized vegetation treatment, removal, modification, or damage) within 0.6 mile of active leks;
- (B) Avoiding surface disturbances (mechanized vegetation treatment, removal, modification, or damage) within 4.0 miles of active leks from March 1 through July 15;
- (C) Sagebrush communities shall be maintained within 0.25 miles of known summer-fall habitat (e.g., riparian, wet meadows, or irrigated agricultural fields). Treatment of sagebrush in these areas is not discouraged but shall be designed to maintain and/or enhance the primary constituent elements (PCE) of Gunnison sage-grouse habitat as outlined in the Service's proposed rule on GUSG Critical Habitat (January 13, 2013, [78 FR2540](#)). [More details on the GUSG Critical Habitat and PCEs are summarized beginning on [page 45](#) of the Opinion].

For purposes of implementation of this Opinion, four complementary components will apply in order to achieve the specific performance requirements outlined above:

First, NRCS will incorporate this coordination process into all covered conservation practices and for all Conservation Plans.

Second, NRCS will coordinate on a project-by-project basis with the State Wildlife Agencies for practices deemed 'limited use' ([Table 1](#) of the Conference Opinion) to ensure the practice(s) is (are) applicable and conditioned appropriately to minimize adverse impacts. These practices include all practices that have the potential to substantially disturb sagebrush (e.g. brush management, grazing land mechanical treatment, etc.).

Third, NRCS will develop a consolidated table outlining state imposed restrictions/conditions and formally distribute to NRCS employees in both CO and UT as well as to the Service. Colorado's additional state restrictions can be found on the electronic [Field Office Technical Guide \(FOTG\)](#), Section II, SEC-T&E-ESA Programmatic Consultation.

Fourth, if the responsible state wildlife agency chooses not to provide the recommendations or does not otherwise provide additional assistance, NRCS will confer directly with the local Service office for any project specific recommendations.

**APPENDIX 5: Gunnison Sage Grouse Wildlife Habitat Evaluation Guides (WHEG) for Mesic**

 <b>NRCS - Colorado and Utah</b>		<b>Wildlife Habitat Evaluation Guide - Gunnison Sage Grouse - Mesic Sites</b>	
<b>June 2014</b>			
Owner/Operator:		District:	
County:		Field Office:	
Assisted By:		Acres:	
Location:		Date:	
Farm & Tract #:		Contract #:	
Assessment Area (name or description):			
<p><b>General Information:</b> Sage-grouse are found in sagebrush-steppe communities mixed with grasslands, shrubs, upland meadows, and riparian areas. Sage-grouse are dependent on the presence of sagebrush for their survival. This model should be used only in areas inhabited by sage-grouse or in proposed expansion areas for sage-grouse. Consider habitat needs of other wildlife species that use similar sagebrush habitat before implementing conservation practices. It is also important to take a landscape view of what exists on lands adjacent to the area of concern.</p> <p><b>Instructions:</b> Use Mesic model in MLRAs 48A &amp; 47 or in areas with mean annual precipitation &gt;15 inches. Use Xeric model in MLRAs 48B, 34A, &amp; 36 or in areas with mean annual precipitation &lt;15 inches. Enter info into yellow boxes. Interpolate scores between categories as needed.</p> <p><b>Area of Assessment:</b> The area to assess can be as small as a single field or as large as an entire tract or ranch. If the area is very large it may need to be stratified into patches of habitat with similar quality with field measurements conducted in each patch and weighted averaged for the entire assessment area. All habitat types or areas with potential to be a particular habitat type within the assessment area should be evaluated.</p> <p><b>Seasons of Sage Grouse Use</b> Conservation planners should consult a wildlife biologist to identify which season(s) of sage grouse use they are working in. The potential seasons of use are as follows:</p> <p>A. Nesting/Early Brood Habitat: Sagebrush communities delineated within 4 miles of an active strutting ground breeding habitat includes active strutting grounds, and nesting and early brood-rearing habitat usually in use from March through July (GuSG Conservation Plan 2005).</p> <p>B. Summer/Early Fall Brood Habitat: Vegetation communities including sagebrush, agricultural fields, and wet meadows that are within 4 miles of an active strutting ground (GuSG Conservation Plan 2005). Habitat within a 1/4 mile of riparian, wetland, or wet meadow habitat may also be considered this habitat type.</p> <p>C. Winter Habitat: Sagebrush areas within currently occupied habitat that are available (i.e., not covered by snow) to sage-grouse in average winters. These areas either have sufficient shrub height to be above average snow depths, or are exposed due to topographic features (e.g., windswept ridges, south-facing slopes) (GuSG Conservation Plan 2005). Treatments in winter habitat should be avoided.</p> <p>D. General Habitat Elements: Other factors that may impact grouse population and habitat. Applicable to all assessment areas.</p> <p style="text-align: center;"><a href="#">Gunnison Sage-Grouse Rangewide Conservation Plan Link</a></p>			

**A. Nesting/Early Brood Habitat**

If you are not evaluating Nesting/Early Brood Habitat leave questions 1-9 blank:

1) Canopy Cover of Sagebrush	Multiplier	Value	Before	After
a) 15 - 20%	1	1.00		
b) 12 - <15%; >20 - 35%		0.75		
c) 10 - <12%; >35 - 50%		0.50		
d) 5 - <10%; >50%		0.25		
e) <5%		0.00		
		Enter value here ----->		
		Value after applying weight multiplier		
2) Average Height of Sagebrush Canopy	Multiplier	Value	Before	After
a) 15 - 20 inches	1	1.00		
b) 12 - 14 inches; >20 - 50 inches		0.75		
c) 8 - <12 inches		0.50		
d) >50 inches		0.25		
e) <8 inches		0.00		
		Enter value here ----->		
		Value after applying weight multiplier		
3) Sagebrush Age Structure and Recruitment	Multiplier	Value	Before	After
Size classes are: mature, intermediate, and seedlings (actual sizes vary by species).				
a) All sizes/age classes present and well distributed	1	1.00		
b) 2 obvious sizes/age classes present; some seedlings		0.75		
c) Even aged stand of mature or intermediate; few seedlings		0.50		
d) Sagebrush cover is very sparse, few to no seedlings		0.25		
e) Little to no cover and/or mature sagebrush only		0.00		
		Enter value here ----->		
		Value after applying weight multiplier		
4) Non-Sagebrush Shrub Canopy Cover	Multiplier	Value	Before	After
Evaluate this factor only on Ecological Sites where non-sagebrush shrubs are the dominant shrub component (>5%) of the potential plant community and important for sage-grouse habitat.				
a) If evaluation area is an Ecological site with sagebrush as the dominant shrub component leave this question blank.	1			
b) 5 - 15%		1.00		
c) 16 - 20%		0.75		
d) 21 - 30%		0.50		
e) 31 - 40%		0.25		
f) >40%		0.00		
		Enter value here ----->		
		Value after applying weight multiplier		

Sites

<b>5) Perennial Grass Canopy Cover</b>		Multiplier	Value	Before	After
a) 23 - 40%		1	1.00		
b) 20 - <23%; >40 - 45%			0.75		
c) 15 - 20%; >45 - 50%			0.50		
d) 5 - 14%; >50%			0.25		
e) <5%			0.00		
		Enter value here ----->			
		Value after applying weight multiplier			
<b>6) Average Perennial Grass Height</b> Current years growth plus residual cover from April 15 - July 1		Multiplier	Value	Before	After
a) >6 inches on >2/3rds of the nesting habitat in the assessment area		1	1.00		
b) >5 - 6 inches on >2/3rds of the nesting habitat in the assessment area			0.75		
c) 4 - <5 inches on >2/3rds of the nesting habitat in the assessment area			0.50		
d) 2 - <4 inches on >2/3rds of the nesting habitat in the assessment area			0.25		
e) <2 inches on >2/3rds of the nesting habitat in the assessment area			0.00		
		Enter value here ----->			
		Value after applying weight multiplier			
<b>7) Forb Canopy Cover</b> Forb species must be non-invasive.		Multiplier	Value	Before	After
a) >30%		1	1.00		
b) >22 - 30%			0.75		
c) 15 - 22% OR >50% of site potential			0.50		
d) 5 - <15%			0.25		
e) 1 - 4%			0.10		
f) <1%			0.00		
		Enter value here ----->			
		Value after applying weight multiplier			
<b>8) Forb Diversity</b> Forb species must be non-invasive and more than a trace on the range inventory to count.		Multiplier	Value	Before	After
a) 10 or more species		1	1.00		
b) 8 - 9 species			0.75		
c) 6 - 7 species OR >50% of site potential			0.50		
d) 4 - 5 species			0.25		
e) <4 species			0.00		
		Enter value here ----->			
		Value after applying weight multiplier			
<b>9) Distance to Brood Habitat</b> Distance from approximate center of assessment area to the nearest edge of adequate summer-fall herbaceous dominated brood habitat (on or off of assessment area)		Multiplier	Value	Before	After
a) <1/2 mile		1	1.00		
b) >1/2 - 1 miles			0.75		
c) >1 - 2 miles			0.50		
d) >2 - 4 miles			0.25		
e) >4 miles			0.00		
		Enter value here ----->			
		Value after applying weight multiplier			
<b>A1. Nesting/Early Brood HSI for sagebrush ecological sites = average of the habitat factors</b>					
<b>A2. Nesting/Early Brood HSI for ecological sites dominated by shrubs other than sagebrush = average of the habitat factors</b>					

**B. Summer/Early Fall Brood Habitat**

<b>If you are not evaluating Summer/Early Fall Brood Habitat leave questions 10-14 blank:</b>					
<b>10) Riparian Areas, Wet Meadows, Springs, and Seeps</b> Measure grass/grass like height between July 1-Sept 1. Count new and residual growth.		Multiplier	Value	Before	After
a) > 6 inches on >2/3rds of the summer/fall brood habitat in the assessment area		2	1.00		
b) >5 - 6 inches on >2/3rds of the summer/fall brood habitat in the assessment area			0.75		
c) 4 - <5 inches on >2/3rds of the summer/fall brood habitat in the assessment area			0.50		
d) 2 - <4 inches on >2/3rds of the summer/fall brood habitat in the assessment area			0.25		
e) <2 inches on >2/3rds of the summer/fall brood habitat in the assessment area			0.00		
		Enter value here ----->			
		Value after applying weight multiplier			
<b>11) Riparian Areas, Wet Meadows, Springs, and Seeps</b> Measure forb height between July 1 - Sept 1.		Multiplier	Value	Before	After
a) Forb height >4 inches		1	1.00		
b) Forb height >3 - 4 inches			0.75		
c) Forb height 2 - 3 inches			0.50		
d) Forb height 1 - <2 inches			0.25		
e) Forb height <1 inches			0.00		
		Enter value here ----->			
		Value after applying weight multiplier			
<b>12) Forb Canopy Cover</b>		Multiplier	Value	Before	After
a) >25%		2	1.00		
b) 18 - <25%			0.75		
c) 13 - <24%			0.50		
d) 5 - <13%			0.25		
e) <5%			0.10		
		Enter value here ----->			
		Value after applying weight multiplier			

13) Herbaceous Canopy Cover (Grass/grass like plants)		Multiplier	Value	Before	After
a) >25%		2	1.00		
b) 16 - 25%			0.75		
c) 10 - 15%			0.50		
d) 5 - 9%			0.25		
e) <5%			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		
14) Forb Diversity		Multiplier	Value	Before	After
a) >10 species		1	1.00		
b) 8 - 9 species			0.75		
c) 6 - 7 species OR >50% of site potential			0.50		
d) 4 - 5 species			0.25		
e) <4 species			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		
<b>B. Summer/Fall HSI = average of habitat factors</b>					

**C. Winter Habitat**

If you are not evaluating Winter Habitat leave questions 15 and 16 blank.

15) Sage Canopy Cover in Winter		Multiplier	Value	Before	After
a) 30 - 40%		1	1.00		
b) 20 - < 30%			0.75		
c) 15 - <20%, OR, >40 - 50%			0.50		
d) 10 - <15%, OR, >50%			0.25		
e) <10%			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		
16) Percent of Total Sagebrush Canopy Exposed During Period of Average Maximum Snow Depth		Multiplier	Value	Before	After
Use local information or information can be found on at <a href="http://www.wrcc.dri.edu/summary/climsmut.html">www.wrcc.dri.edu/summary/climsmut.html</a> (use highest monthly total snow depth).		1	1.00		
a) > 75%			0.80		
b) 60 - < 75%			0.60		
c) 50 - < 60%			0.50		
d) 40 - < 50%			0.40		
e) 30 - <40%			0.20		
f) 15 - <30%		0.00			
			Enter value here ----->		
			Value after applying weight multiplier		
<b>C. Winter HSI = minimum of habitat factors</b>					

**D. General Habitat Elements**

Score for All Assessments.

17) Pinyon and Juniper Invasion: For further info on juniper encroachment phases, see: <a href="#">Biology, Ecology, and Mgmt. of Western Juniper (Miller et al. 2005) (beginning on page 25).</a>		Multiplier	Value	Before	After
a) No conifers present		3	1.00		
b) Primarily no conifers present, but with <10% of area with phase 1, 2, or 3 conifer			0.80		
c) Scattered (10-33% of area) phase 1, with no phase 2 or 3			0.70		
d) Primarily phase 1, with no phase 2 or 3			0.50		
e) Primarily phase 1, with some 2 and 3			0.40		
f) Primarily phase 2, with some 1 and 3			0.30		
g) Primarily phase 3, with some 1 and 2			0.10		
h) Juniper ecological site (if more than 10% of project area)			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		
18) Lek Disturbance All active and dormant leks should be considered. Lekking season is approximately March 1 to May 15. Use local knowledge if more specific dates are needed. Disturbance can be from human activity during lekking behavior within 0.6 mile. Livestock are not considered a disturbance unless there are high concentrations on lekking grounds during strutting periods.		Multiplier	Value	Before	After
a) No leks in the assessment area		1	0.50		
b) All leks in the assessment area are undisturbed during lekking season			1.00		
c) All active leks in assessment area are undisturbed during lekking season			0.50		
d) Some active leks in assessment area are disturbed during season			0.25		
e) All active leks in assessment area are disturbed during lekking season			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		
19) Invasive Weeds See CO Noxious Weeds list or NRCS UT Invasive Species List		Multiplier	Value	Before	After
a) No invasive species are present		2	1.00		
b) Only a few individual invasive species plants are present			0.75		
c) Minor amounts (<1% cover) of invasive species			0.50		
d) Moderate amounts (1-5% cover) of invasive species			0.25		
e) Significant amounts (>5%) of invasive species			0.00		

		Enter value here ----->			
		Value after applying weight multiplier			
<b>20) Artificial Perches</b> Tall structures such as power poles, windmills etc. that provide predator perches. Critical areas are within 1 mile of leks.		Multiplier	Value	Before	After
a) No artificial perches in the planning area	1		1.00		
b) No artificial perches in critical areas, but artificial perches in the planning area			0.50		
c) Few artificial perches in critical area			0.25		
d) Many artificial perches in critical area			0.00		
		Enter value here ----->			
		Value after applying weight multiplier			
<b>D. General HSI = Average of the habitat factors</b>					

Mesic Assessment Area Totals			Before	After
<b>A1. Nesting/Early Brood subtotal (sagebrush dominated ecological sites)</b>				
<b>A2. Nesting/Early Brood subtotal (non-sagebrush shrub dominated ecological sites)</b>				
<b>B. Summer/Early Fall Brood subtotal</b>				
<b>C. Winter subtotal</b>				
<b>D. General subtotal</b>				
<b>Overall HSI (Average of the Habitat Factors)</b>				
<b>WHEG Score Change (After score minus the before score)</b>				

**References:**

Gunnison Sage-grouse Rangewide Steering Committee. 2005. Gunnison Sage-grouse Rangewide Conservation Plan. Colorado Division of Wildlife, Denver, Colorado, USA.

Crawford Area, Gunnison Sage-grouse Conservation Plan. 2011. Crawford Area Local Work Group.

San Miguel Basin, Gunnison Sage-grouse Conservation Plan. 2009. San Miguel Basin Local Work Group.

**Comments:**



### APPENDIX 5 (cont): Gunnison Sage Grouse Wildlife Habitat Evaluation Guides (WHEG) for Xeric Sites

	<b>NRCS - Colorado and Utah</b>	<b>Wildlife Habitat Evaluation Guide - Gunnison Sage Grouse - Xeric Sites</b>
<b>June 2014</b>		
Owner/Operator: _____	District: _____	
County: _____	Field Office: _____	
Assisted By: _____	Acres: _____	
Location: _____	Date: _____	
Farm & Tract #: _____	Contract #: _____	
Assessment Area (name or description): _____		
<p><b>General Information:</b> Sage-grouse are found in sagebrush-steppe communities mixed with grasslands, shrubs, upland meadows, and riparian areas. Sage-grouse are dependent on the presence of sagebrush for their survival. This model should be used only in areas inhabited by sage-grouse or in proposed expansion areas for sage-grouse. Consider habitat needs of other wildlife species that use similar sagebrush habitat before implementing conservation practices. It is also important to take a landscape view of what exists on lands adjacent to the area of concern.</p> <p><b>Instructions:</b> Use Mesic model in MLRAs 48A &amp; 47 or in areas with mean annual precipitation &gt;15 inches. Use Xeric model in MLRAs 48B, 34A, &amp; 36 or in areas with mean annual precipitation &lt;15 inches. Enter info into yellow boxes. Interpolate scores between categories as needed.</p> <p><b>Area of Assessment:</b> The area to assess can be as small as a single field or as large as an entire tract or ranch. If the area is very large it may need to be stratified into patches of habitat with similar quality with field measurements conducted in each patch and weighted averaged for the entire assessment area. All habitat types or areas with potential to be a particular habitat type within the assessment area should be evaluated.</p> <p><b>Seasons of Sage Grouse Use</b> Conservation planners should consult a wildlife biologist to identify which season(s) of sage grouse use they are working in. The potential seasons of use are as follows:</p> <p>A. Nesting/Early Brood Habitat: Sagebrush communities delineated within 4 miles of an active strutting ground breeding habitat includes active strutting grounds, and nesting and early brood-rearing habitat usually in use from March through July (GuSG Conservation Plan 2005).</p> <p>B. Summer/Early Fall Brood Habitat: Vegetation communities including sagebrush, agricultural fields, and wet meadows that are within 4 miles of an active strutting ground (GuSG Conservation Plan 2005). Habitat within a 1/4 mile of riparian, wetland, or wet meadow habitat may also be considered this habitat type.</p> <p>C. Winter Habitat: Sagebrush areas within currently occupied habitat that are available (i.e., not covered by snow) to sage-grouse in average winters. These areas either have sufficient shrub height to be above average snow depths, or are exposed due to topographic features (e.g., windswept ridges, south-facing slopes) (GuSG Conservation Plan 2005). Treatments in winter habitat should be avoided.</p> <p>D. General Habitat Elements: Other factors that may impact grouse population and habitat. Applicable to all assessment areas.</p> <p style="text-align: center;"><a href="#">Gunnison Sage-Grouse Rangeland Conservation Plan Link</a></p>		

#### A. Nesting/Early Brood Habitat

If you are not evaluating Nesting/Early Brood Habitat, leave questions 1-9 blank:

1) Canopy Cover of Sagebrush	Multiplier	Value	Before	After
a) 15 - 25%	1	1.00		
b) 12 - <15%; >25 - 35%		0.75		
c) 10 - <12%, >35 - 50%		0.50		
d) 5 - <10%, >50%		0.25		
e) <5%		0.00		
Enter value here ----->				
Value after applying weight multiplier				
2) Average Height of Sagebrush Canopy	Multiplier	Value	Before	After
a) 10 - 20 inches	1	1.00		
b) 21 - 36 inches		0.75		
c) 37 - 50 inches		0.50		
d) >50 inches		0.25		
e) <10 inches		0.00		
Enter value here ----->				
Value after applying weight multiplier				
3) Sagebrush Age Structure and Recruitment	Multiplier	Value	Before	After
Size classes are: mature, intermediate, and seedlings (actual sizes vary by species).				
a) All sizes/age classes present and well distributed	1	1.00		
b) 2 obvious sizes/age classes present; some seedlings		0.75		
c) Even aged stand of mature or intermediate; few seedlings		0.50		
d) Sagebrush cover is very sparse, few to no seedlings		0.25		
e) Little to no cover and/or mature sagebrush only		0.00		
Enter value here ----->				
Value after applying weight multiplier				
4) Non-Sagebrush Shrub Canopy Cover	Multiplier	Value	Before	After
Evaluate this factor only on Ecological Sites where non-sagebrush shrubs are the dominant shrub component (>5%) of the potential plant community and important for sage-grouse habitat.				
If evaluation area is an Ecological Site with sagebrush as the dominant shrub component leave this question blank.				
a) 5-15%	1	1.00		
b) 16-20%		0.75		
c) 21-30%		0.50		
d) 31-40%		0.25		
e) >40%		0.00		
Enter value here ----->				
Value after applying weight multiplier				

5) Perennial Grass Canopy Cover		Multiplier	Value	Before	After
a) 10 - 30%	1		1.00		
b) >30 - 35%			0.75		
c) 5 - <10%, >35 - 40%			0.50		
d) >40 - 50%			0.25		
e) <5%, >50%			0.00		
Enter value here ----->					
Value after applying weight multiplier					
6) Average Perennial Grass Height Current years growth plus residual cover from April 15 - July 1.		Multiplier	Value	Before	After
a) >6 inches on >2/3rds of the nesting habitat in the assessment area	1		1.00		
b) >5 - 6 inches on >2/3rds of the nesting habitat in the assessment area			0.75		
c) 4 - <5 inches on >2/3rds of the nesting habitat in the assessment area			0.50		
d) 2 - <4 inches on >2/3rds of the nesting habitat in the assessment area			0.25		
e) <2 inches on >2/3rds of the nesting habitat in the assessment area			0.00		
Enter value here ----->					
Value after applying weight multiplier					
7) Forb Canopy Cover Forb species must be non-invasive.		Multiplier	Value	Before	After
a) >10%	1		1.00		
b) >8 - 10%			0.75		
c) 5 - <8% OR >50% of site potential			0.50		
d) 3 - <5%			0.25		
e) 1 - <3%			0.10		
f) <1%			0.00		
Enter value here ----->					
Value after applying weight multiplier					
8) Forb Diversity Forb species must be non-invasive and more than a trace on the range inventory to count.		Multiplier	Value	Before	After
a) 10 or more species	1		1.00		
b) 8 - 9 species			0.75		
c) 6 - 7 species OR >50% of site potential			0.50		
d) 4 - 5 species			0.25		
e) <4 species			0.00		
Enter value here ----->					
Value after applying weight multiplier					
9) Distance to Brood Habitat Distance from approximate center of assessment area to the nearest edge of adequate summer-fall herbaceous dominated brood habitat (on or off of assessment area).		Multiplier	Value	Before	After
a) <1/2 mile	1		1.00		
b) >1/2 - 1 miles			0.75		
c) >1 - 2 miles			0.50		
d) >2 - 4 miles			0.25		
e) >4 miles			0.00		
Enter value here ----->					
Value after applying weight multiplier					
<b>A1. Nesting/Early Brood HSI for sagebrush ecological sites = average of the habitat factors</b>					
<b>A2. Nesting/Early Brood HSI for ecological sites dominated by shrubs other than sagebrush = average of the habitat factors</b>					

**B. Summer/Early Fall Brood Habitat**

**If you are not evaluating Summer/Early Fall Brood Habitat leave questions 10-14 blank:**

10) Riparian Areas, Wet Meadows, Springs, and Seeps Measure grass/grass like height between July 1-Sept 1. Count new and residual growth.		Multiplier	Value	Before	After
a) >6 inches on >2/3rds of the summer/fall brood habitat in the assessment area	2		1.00		
b) >5 - 6 inches on >2/3rds of the summer/fall brood habitat in the assessment area			0.75		
c) 4 - <5 inches on >2/3rds of the summer/fall brood habitat in the assessment area			0.50		
d) 2 - <4 inches on >2/3rds of the summer/fall brood habitat in the assessment area			0.25		
e) <2 inches on >2/3rds of the summer/fall brood habitat in the assessment area			0.00		
Enter value here ----->					
Value after applying weight multiplier					
11) Riparian Areas, Wet Meadows, Springs, and Seeps Measure forb height between July 1 - Sept 1.		Multiplier	Value	Before	After
a) Forb height >4 inches	1		1.00		
b) Forb height 2 - 4 inches			0.50		
c) Forb height 1 - <2 inches			0.25		
d) Forb height <1 inch			0.00		
Enter value here ----->					
Value after applying weight multiplier					
12) Forb Canopy Cover		Multiplier	Value	Before	After
a) >10%	2		1.00		
b) >8% - 10%			0.75		
c) 5 - 8% OR >50% of site potential			0.50		
d) 3 - <5%			0.25		
e) 1 - <3%			0.10		
f) <1%			0.00		
Enter value here ----->					
Value after applying weight multiplier					

13) Herbaceous Canopy Cover		Multiplier	Value	Before	After
a) >25%	2		1.00		
b) 16 - 25%			0.75		
c) 10 - 15%			0.50		
d) 5 - 9%			0.25		
e) <5%			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		
14) Forb Diversity		Multiplier	Value	Before	After
a) >10 species	1		1.00		
b) 8 - 9 species			0.75		
c) 6 - 7 species OR >50% of site potential			0.50		
d) 4 - 5 species			0.25		
e) <4 species			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		
<b>B. Summer/Fall HSI = average of habitat factors</b>					

**C. Winter Habitat**

If you are not evaluating Winter Habitat leave questions 15 and 16 blank.

15) Sage Canopy Cover in Winter		Multiplier	Value	Before	After
a) 30 - 40%	1		1.00		
b) 20 - < 30%			0.75		
c) 15 - <20%, OR, >40 - 50%			0.50		
d) 10 - <15%, OR, >50%			0.25		
e) <10%			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		
16) Percent of Total Sagebrush Canopy Exposed During Period of Average Maximum Snow Depth		Multiplier	Value	Before	After
Use local information or information can be found on at <a href="http://www.wrcc.dri.edu/summary/climsmut.html">www.wrcc.dri.edu/summary/climsmut.html</a> (use highest monthly total snow depth).					
a) >75%	1		1.00		
b) 60 - <75%			0.80		
c) 50 - <60%			0.60		
d) 40 - <50%			0.50		
e) 30 - <40%			0.40		
e) 15 - <30%			0.20		
e) < 15%		0.00			
			Enter value here ----->		
			Value after applying weight multiplier		
<b>C. Winter HSI = minimum of habitat factors</b>					

**D. General Habitat Elements**

Score for all assessments.

17) Pinyon and Juniper Invasion: For further info on juniper encroachment phases, see: <a href="#">Biology, Ecology, and Mgmt. of Western Juniper (Miller et al. 2005) (beginning on page 25)</a>		Multiplier	Value	Before	After
a) No conifers present	3		1.00		
b) Primarily no conifers present, but with <10% of area with phase 1, 2, or 3 conifer			0.80		
c) Scattered (10-33% of area) phase 1, with no phase 2 or 3			0.70		
d) Primarily phase 1, with no phase 2 or 3			0.50		
e) Primarily phase 1, with some 2 and 3			0.40		
f) Primarily phase 2, with some 1 and 3			0.30		
g) Primarily phase 3, with some 1 and 2			0.10		
h) Juniper ecological site (if more than 10% of project area)			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		
18) Lek Disturbance		Multiplier	Value	Before	After
All active and dormant leks should be considered. Lekking season is approximately March 1 to May 15. Use local knowledge if more specific dates are needed. Disturbance can be from human activity during lekking behavior within 0.6 mile. Livestock are not considered a disturbance unless there are high concentrations on lekking grounds during strutting periods.					
a) No leks in the assessment area.	1		0.50		
b) All leks in the assessment area are undisturbed during lekking season			1.00		
c) All active leks in assessment area are undisturbed during lekking season			0.50		
d) Some active leks in assessment area are disturbed during season			0.25		
e) All active leks in assessment area are disturbed during lekking season			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		
19) Invasive Weeds		Multiplier	Value	Before	After
See CO Noxious Weeds list or NRCS UT Invasive Species List					
a) No invasive species are present	2		1.00		
b) Only a few individual invasive species plants are present			0.75		
c) Minor amounts (<1% cover) of invasive species			0.50		
d) Moderate amounts (1-5% cover) of invasive species			0.25		
e) Significant amounts (>5%) of invasive species			0.00		
			Enter value here ----->		
			Value after applying weight multiplier		

<b>20) Artificial Perches</b> Tall structures such as power poles, windmills etc. that provide predator perches. Critical areas are within 1 mile of leks or otherwise defined by a biologist with considerations for landscape variables such as topography.	Multiplier	Value	Before	After
a) No artificial perches in the planning area	1	1.00		
b) No artificial perches in critical areas, but artificial perches in the planning area		0.50		
c) Few artificial perches in critical area		0.25		
d) Many artificial perches in critical area		0.00		
		Enter value here ----->		
		Value after applying weight multiplier		
<b>D. General HSI = Average of the habitat factors</b>				

Xeric Assessment Area Totals			
		Before	After
<b>A1. Nesting/Early Brood subtotal</b> (sagebrush dominated ecological sites)			
<b>A2. Nesting/Early Brood subtotal</b> (non-sagebrush shrub dominated ecological sites)			
<b>B. Summer/Early Fall Brood subtotal</b>			
<b>C. Winter subtotal</b>			
<b>D. General subtotal</b>			
<b>Overall HSI (Average of the Habitat Factors)</b>			
<b>WHEG Score Change (After score minus the before score)</b>			

**References:**

Gunnison Sage-grouse Rangewide Steering Committee. 2005. Gunnison Sage-grouse Rangewide Conservation Plan. Colorado Division of Wildlife, Denver, Colorado, USA.

Crawford Area, Gunnison Sage-grouse Conservation Plan. 2011. Crawford Area Local Work Group.

San Miguel Basin, Gunnison Sage-grouse Conservation Plan. 2009. San Miguel Basin Local Work Group.

**Comments:**

GUNNISON SAGE GROUSE CONFERENCE OPINION, APPENDIX 6.

**Flowchart demonstrating when the GuSG Conference Opinion would apply**

Use of this flow chart is recommended for all NRCS assistance (CTA and FA) within the Action Area as defined by the Gunnison Sage Grouse Conference Opinion (CO).

Landowner/Participant: \_\_\_\_\_

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

