

Colorado NRCS Sage-grouse Initiative Strategy



Greater sage-grouse photo courtesy Bruce Waage, NRCS



Gunnison sage-grouse photo courtesy Denver Post, Helen Richardson photo

Sage-Grouse Initiative: Colorado Sage Grouse Strategy

For many years it was thought that there was only one species of sage-grouse. In 2000, Young et al. (2000) identified Gunnison sage-grouse (*Centrocercus minimus*) as a distinct species. Geographic isolation, genetic differences, and strutting behavior separate Gunnison sage-grouse (GUSG) from greater sage-grouse (*Centrocercus urophasianus*). Concerns about small population sizes and long-term survival of the two species have led environmental groups to petition the United States Fish and Wildlife Service (USFWS) to list the sage-grouse under the Endangered Species Act (ESA). Currently, both species of sage-grouse are Federal Candidate species and Colorado State Species of Special Concern.

Colorado has 7 counties with occupied GUSG ranges/habitat (GUSG Steering Committee 2005), all located in West-central to Southwestern Colorado, and Utah has one county with occupied habitat. In 2005, the [Gunnison Sage-grouse Rangewide Conservation Plan \(Plan\)](#) was finalized. Colorado NRCS was signatory to this Plan. There are 6 local working group plans addressing GUSG. For copies of these plans, go to: <http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/Birds/SageGrouseLocalPlans.htm>.

Colorado is on the southeastern edge of the current greater sage-grouse (GRSG) rangewide distribution, making Colorado populations important in maintaining the overall range of the species. Nine counties have occupied GRSG ranges/habitat. In 2008, the [Colorado Greater Sage-grouse Conservation Plan \(Plan\)](#) was finalized. Colorado NRCS was signatory to this Plan. There are 5 local working group plans addressing GRSG. For copies of these plans, go to: <http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/Birds/SageGrouseLocalPlans.htm>.

In March of 2010, NRCS and USFWS signed an agreement to work together to conserve both species of sage-grouse and to ensure sustainability of working farms & ranches. The two agencies agreed to use the ESA's conferencing procedures to assist NRCS in evaluating the effects of and planning ways to better implement practices in sage-grouse habitats. The end result of this conferencing was the Conference Report for the Natural Resources Conservation Service Sage-grouse Initiative (SGI).

The Colorado Greater Sage-grouse Steering Committee (CGSSC) has identified and prioritized 19 issues that have potential to affect GrSG populations in Colorado (Table 1). With the exception of hunting, the list is similar for GuSG.

Table 1. Issues with Potential to Affect Colorado Sage-grouse (Draft Implementation Plan for the Colorado Greater Sage-grouse Conservation Plan, 2009)
1. Energy and Mineral Development
2. Infrastructure
3. Roads
4. Fire and Fuels Management



5. Housing Development
6. Improper Habitat Enhancement*
7. Weeds*
8. Grazing*
9. Pinyon-juniper Encroachment*
10. Weather
11. Agricultural Conversion*
12. Predation
13. Pesticides
14. Disease and Parasites
15. Habitat Linkages*
16. Hunting
17. Recreational Activities
18. Genetics
19. Lek Viewing

* Indicates an issue that NRCS may affect with this strategy.

Colorado NRCS is fully committed to implementation of the two Plans.

Working off the two sage-grouse State level Plans, Colorado’s Sage-grouse Strategy focuses on 4 different areas:

- outreach and education,
- prioritizing resources,
- identifying limiting factors and threats, and
- managing habitat to improve health of the sagebrush community.

Outreach and Education:

Current concerns about sage-grouse habitat make educating stakeholders (landowners, Conservation Districts, NRCS employees, and sage-grouse working groups) an important priority in implementing a successful strategy. The following steps are being taken to address this area of concern:

- Field Offices and Public Affairs staff develop and distribute promotional materials to the media.
- Provide two training courses for NRCS employees: one on sage-grouse life history and habitat needs and one on sagebrush ecology and identification.
- Use Net Meetings to keep Field Offices up-to-date on the Initiative, Conference Report, and other new developments.
- Colorado NRCS currently has 6 NRCS or Private Lands Partner wildlife biologists in areas where sage-grouse occur. Plans are to add two additional Private Lands Partner biologists in the 2011 Fiscal Year. One will be in the Gunnison Field Office and one will be in the Kremmling Field



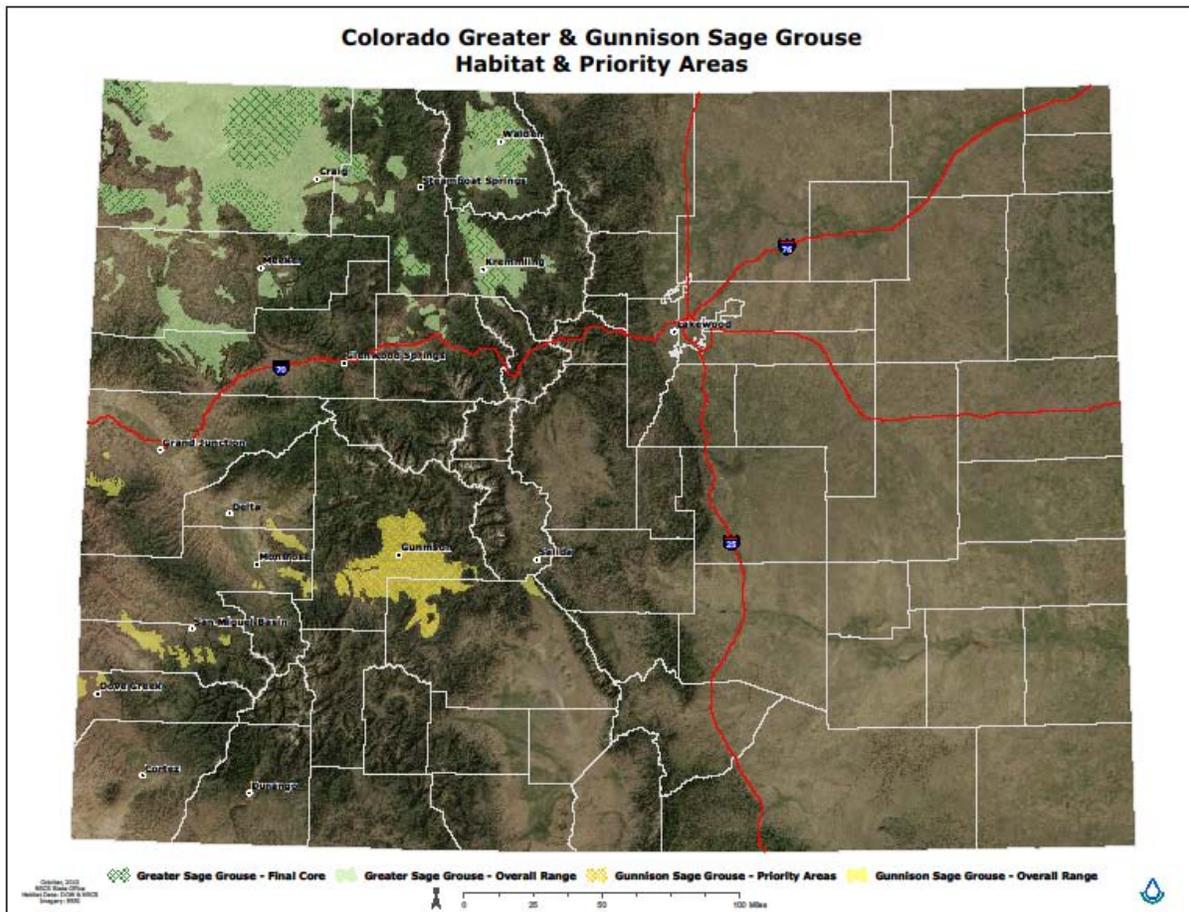
Office. These biologists work with Field Office planners to develop informed conservation plans that address the needs of sage-grouse in Colorado.

- GIS staff - Create maps of habitat areas and core areas for Field Offices to use in planning.

Prioritizing Resources:

Colorado NRCS will use core areas; EQIP, WHIP, and GRP; and ranking systems to prioritize program dollars where they will do the most good for sage-grouse and sagebrush-steppe habitats.

There are about 4,500,000 acres of mountain, Wyoming, and big sagebrush in Colorado (Schrupp, et. al., 2000). However sage-grouse are not uniformly distributed throughout this area. To focus conservation efforts, occupied sage-grouse habitat areas were further refined into core areas where most breeding sage-grouse occur. Projects located in core areas are given higher priority than projects outside core areas.



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Projects to improve sage-grouse habitat will be prioritized through regular EQIP and WHIP program delivery and with Sage-grouse Initiatives that will set aside earmarked funds for sage-grouse projects. Partner biologists will lead planning of sage-grouse projects to insure they comply with the Conference Report requirements.

Easement program rankings give priority ranking points to offers that include sage-grouse habitat.

Identifying Limiting Factors and Threats to Populations:

The two State level Plans identify three types of habitat important to sage-grouse: spring or breeding, summer-fall, and winter habitat. Optimum vegetation height and percent cover are described for each of the three habitats. The Colorado sage-grouse model (see Appendix 1), developed between NRCS and CDOW, is based on these optimal vegetation parameters. The model is used to identify limiting factors for sage-grouse which can be addressed with conservation practice application.

In addition to the limiting factors identified through the sage-grouse model, planners evaluate which threats occur on a client’s property. Threats to populations are identified in the two Statewide Sage-grouse Plans and in the 14 Local Working Group Plans. NRCS determined which of these threats we could address with the SGI. These threats are listed in the Threats table below.

Threats table

Threat	Population*		
	NWCO, MWR, LAR, DOVE	NESR, PPR, PM, SM, PP, CRAW, CSC	NP, MP, GUNN
Agricultural/Habitat Conversion: Expiring CRP	Yes	No	No
Drought: Brood rearing habitat needing forbs and insects	Yes	Yes	Yes
Fences: Within ¼ mile of lek	Yes	Yes	Yes
Fences: Known collision or raptor perch problems	Yes	Yes	Yes
Fragmentation: Brush management	Yes	Yes	Yes
Fragmentation: Sagebrush conversion to pasture, hay, cropland, other uses	Yes	Yes	Yes
Grazing: Habitat areas being grazed	Yes	Yes	Yes
Grazing: Stock tanks without escape ramps	Yes	Yes	Yes
Invasive Species: Invasive species/noxious weeds affecting habitat	Yes	Yes	Yes
Pinyon-juniper encroachment into sagebrush grassland	Yes	Yes	No

*NWCO=Northwest Colorado, NESR=North Eagle South Routt, NP=North Park, MP=Middle Park, PPR=Parachute Piceance Roan, MWR=Meeker White River, LAR=Laramie River, GUNN=Gunnison, PM=Pinyon Mesa, SM=San Miguel, DOVE=Dove Creek, PP=Poncha Pass, CRAW=Crawford, CSC=Cerro Summit Cimarron



Habitat Management: The amount, distribution, and quality of sagebrush habitat are vital for sage-grouse survival. Because sage-grouse use a large home range, habitat management will be conducted on individual properties with consideration of how the property fits into landscape scale habitat with the goal of ensuring that healthy, diverse, well-connected sagebrush-grasslands persist. To maintain and improve habitat for sage-grouse and other associated sage-steppe obligates, all management practices will be aimed at improving rangeland health, diversity, and sustainability.

Following limiting factor and threats identification, NRCS works with the client to determine the best course of action for the property. The best combination of programs, described above, and conservation practices, described below, are used to develop a conservation plan that maintains, enhances, or restores the habitat types that occur on a property, with consideration of landscape scale concerns. Practices will be applied according to the guidelines in the Conference Report.

Grazing Management: Ranching has prevented the conversion of expansive tracts of sagebrush dominated rangeland from conversion to other uses. Livestock grazing has the potential to affect, both positively and negatively, the quality of sagebrush habitat. The primary practice NRCS will use for sage-grouse habitat management is Prescribed Grazing. This practice will be implemented under the Upland Wildlife Habitat Management standard to improve quality of sage-grouse habitat, improve rangeland health, be sustainable on the landscape, and control utilization. Site-specific plans will be developed with each landowner, outlining the stocking rates, rotations, timing, and duration of use in each field. All facilitating practices such as fence, watering facility, well, pipeline, spring development, etc. will be planned and designed to minimize disturbance and to enhance sage-grouse habitat where possible. Fences in strategic locations will be marked and all watering facilities will have escape ramps installed.

Rangeland Restoration/Enhancement: Rangeland that has been degraded no longer supports diverse native vegetation, resulting in the loss of quality habitat for livestock and wildlife. If degradation is severe enough, it causes habitat fragmentation. In some cases, NRCS and the landowner may wish to accelerate the restoration/enhancement of these ranges over what can be accomplished with grazing management alone. Practices that may be used include Grazing Lands Mechanical Treatment, Brush Management, Range Planting, and Access Control. Treatments will be in a mosaic of small blocks. Grazing deferment is required following Brush Management.

Early Brood Rearing Habitat: Forbs and insects are important components of early brood rearing habitat for sage-grouse. Insects are the main food item in sage-grouse chick diets through the first 3 weeks of their lives. Succulent forbs gradually become a large part of the diet until fall when sagebrush becomes the main food source. Riparian areas, wet areas around spring developments, wet meadows, and similar sites provide the forbs and insects needed by sage-grouse chicks. NRCS will focus on restoring hydrology to riparian areas through Prescribed Grazing and Access Control, modifying existing and designing new spring developments to create downslope seeps, and creating artificial springs.

Predation and Accidental Mortality: Avian predators, fence collisions, and drowning in stock tanks, cause some mortality to sage-grouse in Colorado each year. To help avoid these losses, NRCS will cost share



adaptations to fences and stock tanks as well as conifer removal where they have encroached into sagebrush habitats. The Fence standard will allow fences to be marked and fence posts to be fitted with cones or spikes to prevent raptors using them as perches. The Watering Facility standard requires escape ramps in all watering facilities. Brush management will be used to set back conifer encroachment where it has become a problem.

Invasive and Noxious Weeds: Weeds compete with native vegetation and take over areas that once provided sage-grouse habitat and productive rangeland. Integrated Pest Management and Herbaceous Weed Control will be used to control weeds while minimizing damage to native forbs.

Agricultural Conversion: Sagebrush-steppe rangelands have been popular in recent years with people wanting a place in the country. Many working ranches have been subdivided into smaller ranchettes which bring in stressors (fragmentation, disturbance, etc.) to sage-grouse. A goal of the SGI is to maintain sustainable ranches, thus preventing conversion to ranchettes. Conservation Reserve Program (CRP) is another program that plants and maintains previously converted croplands in grasses and shrubs. NRCS is the technical agency for CRP. As such, NRCS develops seeding mixes and mid-contract management plans for CRP. Colorado NRCS offers payments through EQIP for expiring CRP to encourage keeping the fields in grasses and shrubs.

References:

Colorado Greater Sage-grouse Steering Committee (CGSSC). 2008. Colorado greater sage-grouse conservation plan. Colorado Division of Wildlife. Denver, CO, USA.

Colorado Greater Sage-grouse Steering Committee (CGSSC). 2009. Draft implementation plan for the Colorado greater sage-grouse conservation plan.

FWS-NRCS. 2010. Conference report for the Natural Resources Conservation Service sage-grouse initiative (SGI).

Gunnison Sage-grouse Rangewide Steering Committee. 2005. Gunnison sage-grouse rangewide conservation plan. Colorado Division of Wildlife. Denver, CO, USA.

Schrupp, D.L., W.A. Reiners, T.G. Thompson, L.E. O'Brien, J.A. Kindler, M.B. Wunder, J.F. Lowsky, J.C. Buoy, L. Satcowitz, A.L. Cade, J.D. Stark, K.L. Driese, T.W. Owens, S.J. Russo, and F. D'Erchia. 2000. Colorado Gap Analysis Program: A Geographic Approach to Planning for Biological Diversity-Final Report, USGS Biological Resources Division, Gap Analysis Program and Colorado Division of Wildlife, Denver, CO.



Appendix 1

Sage-grouse Habitat Evaluation Model



Wildlife Habitat Evaluation Guide – Sage Grouse - Mesic Sites

October 2010			
Owner/Operator:		District:	
County:		Field Office:	
Assisted By:		Acres:	
Location:		Date:	
Farm & Tract #:		Contract #:	

General Information: 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.

Use Mesic model in MLRAs 48A & 47 or in areas with mean annual precipitation > 15 inches. Use Xeric model in MLRAs 48B, 34A, & 36 or in areas with mean annual precipitation < 15 inches.

Conservation planners should consult a wildlife biologist to identify which habitat type they are working in as defined:

Breeding 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 (CO GrSG Conservation Plan 2008).

Summer Habitat: Vegetation communities including sagebrush, agricultural fields, and wet meadows that are within 4 miles of an active strutting ground (CO GrSG Conservation Plan 2008). Habitat within a 1/4 mile of riparian, wetland, or wet meadow habitat it may also be considered this habitat type.

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) (CO GrSG Conservation Plan 2008). Treatments in winter habitat should be avoided.

[Colorado Greater Sage-Grouse Conservation Plan Link](#)
[Gunnison Sage-Grouse Rangeland Conservation Plan Link](#)

1)	Percent canopy cover of sagebrush	Value	Before	After
a)	Area is not native rangeland and/or does not have the potential to become a sagebrush plant community	N/A		
b)	20 - 30%	1.0		
c)	15 - 19% or >30%	0.7		
d)	10 - 14%	0.5		



e)	5 - 9%	0.2		
f)	<5%	0.0		

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2) Average height of sagebrush canopy		Value	Before	After
a)	Area is not native rangeland and/or does not have the potential to become a sagebrush plant community	N/A		
b)	20 - 30 inches	1.0		
c)	15 - 19 inches	0.7		
d)	>30 inches	0.6		
e)	10 - 14 inches	0.5		
f)	<10 inches	0.1		

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3) Perennial grass canopy cover		Value	Before	After
a)	20 - 40%	1.0		
b)	>40%	0.7		
c)	15 - 19%	0.5		
d)	10 - 14%	0.2		
e)	5 - 9%	0.1		
f)	<5%	0.0		

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4) Average perennial grass height (current years growth) from May 15 - July 1		Value	Before	After
a)	>6 inches	1.0		
b)	4 - 6 inches	0.5		
c)	2 - 4 inches	0.2		
d)	<2 inches	0.0		

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5) Riparian areas, wet meadows, springs, and seeps providing succulent forbs and insects		Value	Before	After
a)	Not on property	N/A		
b)	Infrequently grazed for stand maintenance every 3-5 years	1.0		
c)	Not grazed	0.8		
d)	Lightly grazed, < 20% utilization during growing season	0.7		
e)	Moderately grazed, < 50% utilization during growing season	0.5		
f)	Heavily grazed, > 50% utilization during growing season	0.2		

Enter value here -----
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6) Hayfields providing succulent forbs and insects		Value	Before	After
a)	Not on property	N/A		

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b) Haying occurs after August 1	1.0		
c) Haying occurs between July 15 - August 1	0.5		
d) Haying occurs between July 1-15	0.2		
e) Haying occurs before July 1	0.1		

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6) Percent forb canopy cover	Value	Before	After
a) >15%	1.0		
b) 10 - 14%	0.7		
c) 5 - 9%	0.5		
d) 3 - 5%	0.2		
d) >3%	0.0		

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	Before	After
Overall HSI = Lowest of the habitat factors	0.00	0.00



Wildlife Habitat Evaluation Guide – Sage Grouse - Xeric Sites

October 2010			
Owner/Operator:		District:	
County:		Field Office:	
Assisted By:		Acres:	
Location:		Date:	
Farm & Tract #:		Contract #:	

General Information: 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.

Use Mesic model in MLRAs 48A & 47 or in areas with mean annual precipitation > 15 inches. Use Xeric model in MLRAs 48B, 34A, & 36 or in areas with mean annual precipitation < 15 inches.

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Summer Habitat: Vegetation communities including sagebrush, agricultural fields, and wet meadows that are within 4 miles of an active strutting ground (CO GrSG Conservation Plan 2008). Habitat within a 1/4 mile of riparian, wetland, or wet meadow habitat it may also be considered this habitat type.

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) (CO GrSG Conservation Plan 2008). Treatments in winter habitat should be avoided.

[Colorado Greater Sage-Grouse Conservation Plan Link](#)
[Gunnison Sage-Grouse Rangewide Conservation Plan Link](#)

1) Percent canopy cover of sagebrush is:		Value	Before	After
a)	Area is not native rangeland and/or does not have the potential to become a sagebrush plant community	N/A		
b)	20 - 30%	1.0		
c)	15 - 20% or >30%	0.7		
d)	10 - 14%	0.5		
e)	5 - 9%	0.2		
f)	<5%	0.0		
Enter value here ----- -->				
2) Average height of sagebrush canopy		Value	Before	After
a)	Area is not native rangeland and/or does not have the potential to become a sagebrush plant community	N/A		
b)	12 - 28 inches	1.0		
c)	>28 inches	0.7		
d)	8 - 12 inches	0.5		
e)	<8 inches	0.2		
Enter value here ----- -->				
3) Perennial grass canopy cover		Value	Before	After
a)	15-30%	1.0		
b)	>30%	0.7		
c)	9 - 14%	0.6		
d)	5 - 9%	0.5		
e)	<5%	0.2		
Enter value here ----- -->				
4) Average perennial grass height (current years growth) from May 15 - July 1		Value	Before	After
a)	>6 inches	1.0		
b)	4 - 6 inches	0.5		



c)	2 - 4 inches	0.2		
d)	<2 inches	0.0		

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5) Riparian areas, wet meadows, springs, and seeps providing succulent forbs and insects		Value	Before	After
a)	Not on property	N/A		
b)	Infrequently grazed for stand maintenance every 3-5 years	1.0		
c)	Not grazed	0.8		
d)	Grazed lightly, < 20% utilization during growing season	0.7		
e)	Moderately grazed, < 50% utilization during growing season	0.5		
f)	Heavily grazed, > 50% utilization during growing season	0.2		

Enter value here -----
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6) Hayfields providing succulent forbs and insects		Value	Before	After
a)	Not on property	N/A		
b)	Haying occurs after August 1	1.0		
c)	Haying occurs between July 15 - August 1	0.5		
d)	Haying occurs between July 1-15	0.2		
e)	Haying occurs before July 1	0.1		

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7) Percent forb canopy cover		Value	Before	After
a)	>10%	1.0		
b)	5 - 9%	0.7		
b)	3 - 5%	0.5		
d)	<3%	0.2		

Enter value here -----
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	Before	After
Overall HSI = Lowest of the habitat factors	0.00	0.00

