Wildlife Habitat Evaluation Guide for Sage-Grouse and Sagebrush Habitats – Feb. 2011

This Wildlife Habitat Evaluation Guide (WHEG) is based on the habitat requirements of Greater Sage-grouse (*Centrocercus urophasianus*). It is accepted that managing for this species benefits many other sagebrush-dependent species because of the variety of habitat conditions it requires. This model can be applied to all ecological sites with the potential to support a large component of sagebrush (all types), even if sage-grouse do not currently occupy the habitat.

Use for "Nesting/Brood Rearing Habitat" or "Winter Habitat" or both. If a habitat type does not occur on the site, mark the one not rated "N/A". If a factor is unknown, mark it with "unknown" and provide a brief explanation. At least 80% of applicable factors must be used for Sage-Grouse Initiative planning purposes. If multiple fields exist with different conditions and management, score each field separately and prorate totals by acres. Choose best choice for "Before" and "After". Interpolate between values if necessary. All scores are for current year (previous 12 months) unless otherwise stated. The "After" score is when the conservation plan or practice is mature, which will vary in time. Please note if site potential is below the 1.0 level. Attach a conservation plan showing fields, fences, water locations, nesting/brood rearing and winter habitat (if possible), and movement areas on and off-site (if possible). Document the practices and specifications used to move the score from "Before" to "After" on a 645 Specification Sheet.

Owner/Operator:	Field Office:	
County:	Ecological Site:	
NRCS Planner:	Acres:	Field(s):
NRCS Range Con:	Evaluation Period:	Date:
DWR/NRCS Biologist:	Location (T/R/S):	

Factor	Values	Before score	After score
Nesting / Brood Rearing Habitat (score if nesting or brood rearing habitat is present or potentially present)			
(1) Shrub % canopy cover (sagebrush dominated)			
a) 15 – 25%	1.0		
b) 12 – 15% or 26 – 32%	0.75		
c) 9 – 12% or 32 – 40%	0.5		
d) 5 – 9% or 40 – 50%	0.25		
e) <5% or >50%	0.0		
(2) Perennial grass % canopy cover			
a) >15%	1.0		
b) 12 – 15%	0.75		
c) 8 – 12 %	0.5		
d) 5 – 8%	0.25		
e) <5%	0.0		
(3) Grass leaf height (either residual or green growth) during nesting season			
a) >8 inches	1.0		
b) 6 – 8 inches	0.75		
c) 4 – 6 inches	0.5		
d) 2 – 4 inches	0.25		
e) <2 inches	0.0		
(4) Grass species richness & composition See Rangeland Health Worksheet and/or ESD for the functional/ structural groups			
a) ≥4 perennial grass species AND at least 2 of the structural-functional groups in the reference state	1.0		
b) 3 perennial grass species AND at least 2 of the structural-functional groups in the reference state	0.8		
c) ≥4 perennial grass species in the same structural-functional group	0.7		

d) 3 perennial grass species in the same structural-functional group	0.6		
e) 2 perennial grass species in the same structural-functional group	0.4		
f) 1 perennial grass species	0.2		
g) Predominance of annual and/or invasive grass species or lack of grasses	0.0		
(5) Forb % canopy cover Forbs must be non-invasive			
a) >10% AND 0 invasive forbs	1.0		
b) 8 – 10% AND ≤1 invasive forbs	0.8		
c) 5 – 8% AND ≤1 invasive forbs	0.6		
d) 3 – 5% AND ≤2 invasive forbs	0.4		
e) 1 – 3% AND ≤2 invasive forbs	0.2		
f) <1% OR ≥3 invasive forbs	0.0		
(6) Forb species richness & composition See Rangeland Health Worksheet and/or ESD for the functional/structural groups			
a) ≥10 native forb species representing ≥2 of the structural-functional groups in the reference state	1.0		
b) ≥10 native forb species representing 1 of the structural-functional groups in the reference state	0.8		
c) 7 - 9 native forb species representing ≥2 of the structural-functional groups in the reference state	0.7		
d) 7 - 9 native forb species representing 1 of the structural-functional groups in the reference state	0.6		
e) 5 - 7 forb species of the same structural-functional groups that would dominate the site in a mature plant community	0.5		
f) 3 - 4 forb species of the same structural-functional groups that would dominate the in site in a mature plant community	0.4		
g) <3 forb species representing one of the structural-functional groups that would dominate the site in a mature plant community.	0.2		
h) Predominance of annual and/or invasive forb species	0.0		
(7) Average height of vegetative visual obstruction within planning area during nesting and brood rearing season*			
a) >10 inches	1.0		
b) 8 – 10 inches	0.75		
c) 6 – 8 inches	0.5		
d) 4 – 6 inches	0.25		
e) <4 inches	0.0		
(8) Management of non-mechanically harvested wet meadows, wetlands, riparian areas, springs Management that best fits the last 3 years			
a) Livestock use exclusion, or prescribed grazing designed to enhance all sage-grouse habitat characteristics in this WHEG	1.0		
b) Prescribed grazing during dormant season only (with ≥4 inch stubble height)	0.75		
c) Prescribed grazing during summer (with ≥4 inch stubble height)	0.5		
d) Prescribed grazing during spring (with ≥6 inch stubble height)	0.25		
e) Uncontrolled and/or season-long livestock access or grazing	0.0		
(9) Management of mechanically harvested wet meadows, riparian areas, hay fields or pastures Management that best fits the last 3 years			
a) Harvest restricted to the dormant season (Sept 30th to Oct 31st), native species are dominant, flush bars used on swather, harvest done using inside-out pattern	1.0		
b) Harvest takes place only in early summer (late May to early June depending on elevation) and/or dormant season, introduced pasture grass or hay species present but not dominant, flush bars used on swather, harvest done using inside-out pattern	0.75		
c) Harvest takes place only in early summer (late May to early June depending on elevation) and/or dormant season, introduced pasture grass or hay species present but not dominant, flush bars not used, bird-friendly harvest pattern not used	0.5		
d) Harvest takes place during spring, summer, and fall, introduced pasture grass and hay species dominant, flush bars used, bird-friendly harvest pattern used	0.25		
e) Harvest takes place as many times as possible throughout the year, harvest takes place annually during late summer and early fall (July 15th to Sept 30th), introduced pasture grass or hay species dominant, flush bars not used, bird-friendly harvest pattern not used	0.0		

(10) Insecticide methodology & coverage Near = within 1km/.62miles			
a) None used	1.0		
b) Hand sprayed on <1% of field, not near or brood rearing areas	0.75		
c) Hand or vehicle sprayed on 1 - 10% of field, not near brood rearing areas	0.5		
d) Hand, vehicle, or aerial spray on >10% of field, not near brood rearing areas	0.25		
e) Hand, vehicle, or aerial spray on >10% of field, near brood rearing areas	0.0		
(11) Insecticide timing			
a) None used	1.0		
b) Used July 15 – March 14, not near brood rearing areas	0.8		
c) Used March 15 – July 14, not near brood rearing areas	0.5		
d) Used July 15 – March 14, near brood rearing areas	0.3		
e) Used March 15 – July 14, near brood rearing areas	0.0		
NESTING / BROOD REARING SUBTOTALS = SUM(VALUE 1-11) / 11			

Winter Habitat (score if winter habitat is present or potentially present)			
(12) Sagebrush % canopy cover			
a) 20 - 30%	1.0		
b) 15 - 20 OR 30 - 40%	0.75		
c) 10 - 15 OR 40-50%	0.5		
d) 5 - 10% OR >50%	0.25		
e) <5%	0.0		
(13) Percent of total sagebrush canopy exposed during period of avg. maximum snow depth Use local information or information can be found on at www.wrcc.dri.edu/summary/climsmut.html (use highest monthly total snow depth)			
a) >75%	1.0		
b) 60 - 75%	0.8		
c) 45 - 60%	0.6		
d) 30 - 45%	0.4		
e) 15 - 30%	0.2		
f) <15%	0.0		
WINTER SUBTOTALS = SUM(VALUE 12-13) / 2			

General Habitat Conditions (rate these factors for all projects)			
(14) Sagebrush age structure & recruitment Size classes are: mature, intermediate, and seedlings (actual sizes vary by species)			
a) All sizes/age classes present and well distributed	1.0		
b) 2 obvious sizes/age classes present ; seedlings rare	0.75		
c) Even aged stand of mature or intermediate; few seedlings	0.5		
d) Sagebrush cover is very sparse, with little recruitment	0.25		
e) Little to no cover and mature sagebrush only	0.0		
(15) Conifer invasion of site (i.e. pinyon and/or juniper) Do not count pre-settlement conifers			
a) No non-historical conifers present	1.0		
b) Conifer invasion <1%, with young trees (<5ft)	0.8		
c) 1 - 3% conifer canopy cover	0.6		
d) 3 - 8% conifer canopy cover (conifers scattered throughout the site)	0.5		
e) 8 - 20% conifer canopy cover (conifer canopy becoming dominant)	0.3		
f) 20 - 50% conifer canopy closing, understory compromised	0.1		
g) >50% conifer canopy cover, understory is severely compromised	0.0		
(16) Invasive plant species See "NRCS UT Invasive Species List"			
a) No invasive species	1.0		
b) 1 invasive plant species AND <1% cover of invasive species	0.75		
c) ≤2 invasive plant species AND <3% cover of invasive species	0.5		
d) ≤3 invasive plant species AND <10% cover of invasive species	0.25		
e) >3 invasive plant species AND >10% cover of invasive species	0.0		
(17) Human disturbance Houses roads (>30 cars/hour & speed >30mph), oil & gas, etc. Distance from edge of planning area			
a) >3 miles	1.0		
b) 2 - 3 miles	0.75		
c) 1 - 2 mile	0.5		
d) 1 - ½ mile	0.25		
e) <½ mile	0.0		

(18) Fence Critical areas are within 1 mile from a lek and/or in movement corridors. Non-critical areas are all other populated areas. See NRCS protocol for fence marking			
a) No fence in planning area	1.0		
b) No fence in critical areas	0.75		
c) Fence in critical areas, all fence marked, no unused fence	0.5		
d) Fence in critical areas, all fence marked, some unused fence	0.25		
e) Unmarked fence in critical areas	0.0		
(19) Drowning threat			
a) No watering facilities in the planning area	1.0		
b) All watering facilities have escape ramps that meet NRCS standards	0.5		
c) Some watering facilities have escape ramps that meet NRCS standards	0.25		
d) No watering facilities have escape ramps that meet NRCS standards	0.0		
(20) Avian predation Artificial perches can be power poles, windmills, non-native trees, etc.			
a) No artificial perches in the planning area	1.0		
b) No artificial perches in critical areas (see definition in *20* above), artificial perches in the planning area, able to remove	0.75		
c) No artificial perches in critical areas, artificial perches in the planning area, not able to remove	0.5		
d) Artificial perches in critical area, able to remove	0.25		
e) Artificial perches in critical area, not able to remove	0.0		
GENERAL HABITAT CONDITIONS SUBTOTALS = SUM (VALUE 14-20) / 7			

WHEG TOTALS		
	Before	**After**
NESTING / BROOD REARING HABITAT SUBTOTALS		
WINTER HABITAT SUBTOTALS		
GENRAL HABITAT CONDITIONS SUBTOTALS		
TOTALS (Sum of 3 Subtotals / 3)		
PLANNED IMPROVEMENT (After TOTAL – Before TOTAL)		
CUMULATIVE WHEG TOTALS (if necessary)		
Are other fields with different conditions & management added in from another WHEG? (circle one)	**YES**	**NO**
If YES, prorate all fields by acres and input CUMULATIVE TOTAL		
If YES, CUMULATIVE PLANNED IMPROVEMENT (After CUMULATIVE TOTAL – Before CUMULATIVE TOTAL)		

* This measurement provides an indication of visual obstruction for predators and escape cover for grouse. This variable measures the height at which vegetation no longer obscures an object. Surveys typically use a banded survey pole, also known as a robel pole. Stand 20ft from pole and observe the height at which the pole (or a band) is <25% obscured by vegetation.

References

Connelly, J. W. et al. 2000. Guidelines to manage sage grouse populations and their habitats. Wildlife Society Bulletin 28(4): 967 – 985.

Connelly, J. W. et al. 2003. Monitoring of Greater Sage-grouse Habitats and Populations. No. 979 College of Natural Resources Experiment Station, College of Natural Resources, University of Idaho, Moscow, ID.

Crawford, J. A. et al. 2004. Ecology and management of sage-grouse and sage-grouse habitat. J. Range Management 57(1):2 – 19.

Paige, C. and S. A. Ritter. 1999. Birds in a sagebrush sea: managing sagebrush habitats for bird communities. Partners in Flight Western Working Group, Boise, ID.

Rich, T. and B. Altman. Under the sage grouse umbrella: will management for sage grouse protect other birds and animals in the sagebrush steppe? Bird Conservation. Issue 14, pg. 10.

Utah Division of Wildlife Resources (UDWR). 2009. Utah Greater sage-grouse Management Plan. Utah Department of Natural Resources, Division of Wildlife Resources, Publication 09-17, Salt Lake City, Utah, USA.

Questions?: Contact your NRCS-DWR Biologist or the NRCS State Biologist at (801) 524-4566