

**Sheldon PMU
Habitat Risk Assessment Matrix**

Risk Factor	Seasonal Habitat ^a	Contributing Management Action	Yes/N	Degree H, M, L	Conservation measures	Responsible Parties	Monitoring	Time frames
GROUP 1: HABITAT DEGRADATION								
1) Temporary conversion of sagebrush to perennial herbaceous	N,B,W	a) Fire/herbicide on areas with strong native understory	Y	H	Suppress wildfire. Reseed burns not recovering naturally. Research sage grouse habitat use. Repeat intensive fire monitoring (OSU)	USFWS OSU	Vegetation monitoring on burns and seeded areas. Track sagebrush recovery. Monitor for cheatgrass and weeds	Every 3 to 5 years
2) Long-term/permanent conversion of sagebrush to perennial herbaceous	N,B,W	a) Non-native species seeding	N					
3) Conversion of sagebrush to annual herbaceous	N,B,W	a) Fire on areas with weak understory, usu. low elevations	Y	M	Suppress wildfire, especially in R2 habitats. Reseed with native species appropriate for sage grouse after fires. Research ways to effectively reestablish native vegetation	USFWS	Vegetation monitoring on burns and seeded areas. Track sagebrush recovery. Monitor for cheatgrass and weeds	Every 3 to 5 years
		b) Noxious weed invasion	Y	L	Treat noxious weeds.	USFWS	Monitor spread of weeds and effectiveness of treatments	Annually
4) Conversion of sagebrush to juniper	N,B,W	a) Lack of fire/disturbance	Y	L-M	Treat areas with small, invading juniper by prescribed fire or cutting	USFWS	Monitor expansion of juniper. Monitor effectiveness of treatments	Every 3-5 years
5) Loss of sagebrush acres	N,B,W	a) Mining	Y	L	Apply mitigation measures for sage grouse in the event an existing mine claim becomes active	USFWS		
		b) Urban expansion	N					
6) Conversion of forb meadows to mat grass	B	a) underutilization	N				Monitor important sage grouse meadows for forbs	Every 5 years

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meadows		b) Lack of fire	Y	L	Experiment with prescribed fire in meadows for forb availability	USFWS	Monitor vegetation composition and grouse use in managed and unmanaged meadows. Monitor feral horse use in meadows	Every 5 years
7) Conversion of meadows to bare ground	B	a) Over utilization, usually associated with water sources	Y	M	Reduce feral horse population to current management level of 125. Rest from livestock grazing.	USFWS	Monitor horse use and trend in riparian areas	Annually
8) Conversion of meadows to upland vegetation	B	a) Reduced functionality associated with head cutting, soil alteration (roads, heavy grazing), or confinement of flood plain (roads)	Y	H (horse) L (roads)	Reduce feral horse population to current management level of 125. Close or re-route roads in meadows. Prohibit new roads in meadows. Conduct LE patrol for closed roads	USFWS	Monitor horse use and trend in riparian areas	Annually
9) Insufficient stubble for successful nesting cover	N	a) Short term over utilization	Y	L	Reduce feral horse population to current management level of 125.	USFWS	Monitor horse utilization in uplands	Annually
10) Low vigor and diversity herbaceous vegetation (poor nesting cover and spring food)	N,B	a) Lack of fire/ disturbance in mountain big sagebrush	Y	L	Prescribed fire or brush beat mountain big sage sites with dense overstory and little understory	USFWS	Monitor for vegetation recovery on treatments. Monitor for weed invasion	Every 3 to 5 years
		b) Long term overutilization	Y	L	Rest from livestock grazing. Reduce feral horse population to current management level of 125.	USFWS	Monitor horse use in uplands	Annually
		c) Annual, long duration spring use	Y	L	Reduce feral horse population to current management level of 125.	USFWS	Monitor horse use in uplands	Annually
		d) Noxious weed/cheatgrass encroachment	Y	L	Treat noxious weeds	USFWS	Monitor spread of weeds and effectiveness of treatments	Annually

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11) Lack of understory for sage grouse nesting cover and spring food	N,B	a) Lack of fire/disturbance in low elevations	Y	M	Consider experimental treatment to release understory. Research techniques for restoring native understories. Reduce feral horse populations. Rest from livestock grazing.	USFWS, NDOW	Monitor response of understory to cattle removal. Monitor effectiveness of any habitat treatment	Every 10 years Every 3 to 5 years
		b) Historic over utilization	Y	M	same as above	USFWS	same as above	same as above
		c) Noxious weed/cheat grass encroachment	Y	M	Treat noxious weeds	USFWS	Monitor spread of weeds and effectiveness of treatments	Annually
12) Low density or lack of appropriate insects for early brood rearing food	B	a) Noxious weed/cheat grass encroachment	Y	L	Treat noxious weeds	USFWS	Monitor spread of weeds and effectiveness of treatments	Annually
		b) Annual, long duration spring use	Y	L	Reduce feral horse population to current management level of 125. Rest from livestock grazing	USFWS	Monitor horse use in uplands	Annually
		c) Long term overutilization	Y	L	Rest from livestock grazing. Reduce feral horse population to current management level of 125.	USFWS	Monitor horse use in uplands	Annually
13) Lack of access to water	N,B,W	a) Spring developments that capture all water and are inaccessible to sage grouse	Y	L	Remove spring developments (after horses are removed). Modify guzzlers for sage grouse use	USFWS NDOW		
GROUP 2: DISTURBANCE								
14) Human activity during breeding and nesting, or at watering sites	N,B,W	a) Mining	Y	L	Apply mitigation measures for sage grouse in the event an existing mine claim becomes active	USFWS		
		b) Roads	Y	L	LE patrols for use of closed roads	USFWS		
		c) Urban Expansion	N					
		d) Recreation	Y	L	LE patrols for closed roads and camping.	USFWS NDOW		

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15) Additional predator perch sites	N,B,W	a) Juniper encroachment, lack of fire	Y	L	Control juniper expansion	USFWS	Monitor expansion of Juniper Monitor effectiveness of treatments	Every 10 - 15 years Every 3 to 5 years
		b) Pasture/allotment fences, spring exclosures, wells, troughs	Y	L	Continue fence removal program.	USFWS Sierra Club Audubon		
		c) Transmission lines, communication sites	N					
16) Artificially high predator population	N,B,W	a) High speed roads/road kill	Y	L				
		b) Urban expansion	N					
		c) Agricultural expansion	N					
17) Human-caused fire	N,B,W	a) Dispersed recreation and roads	Y	L	Suppress wildfire. LE patrol for closed roads, illegal camping, and fire restrictions	USFWS		

^aSeasonal Habitat - N = nesting, B = Brood-rearing, W = Winter