U.S. Department of the Interior
Bureau of Land Management

Management Evaluation Report

South Red Desert Complex
Stewart Creek and Lost Creek HMAs

March 2026

Rawlins Field Office
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South Red Desert Complex Herd Management Area Plan
Management Evaluation
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INTRODUCTION

The Red Desert Complex includes the Antelope Hills, Crooks Mountain, Green Mountain, Stewart Creek, and Lost Creek Herd Management Areas (HMAs) The complex lies south and west of Highway 789/287 and north of interstate 80. The complex is located within portions of Fremont, Sweetwater, Natrona, and Carbon counties, within the Bureau of Land Management Wind River Bighorn Basin and High Desert districts. The complex is approximately 753,000 acres. These HMAs are considered a complex since the HMAs are adjacent, but not necessarily contiguous, and have animal interchange. For practical purposes these HMAs are often gathered at the same time.

The northern and southern portions of the Red Desert complex are being evaluated independently by the respective field offices that oversee their management. These management evaluations are the first step in the creation of a Herd Management Area Plan (HMAP). A management evaluation examines the existing vs. the desired condition of both the wild horse population and its habitat. This document will focus on the Lost Creek and Stewart Creek HMAs located in the southern portion of the complex administered by the Rawlins FO. For the purposes of this document, we will refer to these HMAs as the South Red Desert Complex. The Lander FO will evaluate the northern HMAs within the complex, referred to as the North Red Desert. Both the North and South Red Desert Complex management evaluations will be released to the public to provide a framework for public comment regarding a management plan (HMAP) to guide future management of the herds within the Red Desert complex.

The terms “horse” and “wild horse” are used synonymously throughout this document.

The South Red Desert Complex includes the Lost Creek and Stewart Creek HMAs and is located in Carbon and Sweetwater counties within the BLM’s High Desert District. The South Red Desert Complex is approximately 419,000 acres with 168,000 acres making up the Stewart Creek HMA and 251,000 acres making up the Lost Creek HMA.

RELATIONSHIP TO STATUTES, REGULATIONS, POLICIES, OR PLANS

The current Resource Management Plans (RMPs), laws, regulations, and policies, as outlined below, set forth management goals and objectives and reaffirm Appropriate Management Level (AML) for the Herd Management Areas (HMAs) within the Complex.

<u>2008 Rawlins RMP:</u>

- **Goal:** “Manage to protect, maintain, and control viable healthy herds of wild horses while retaining their free-roaming nature, provide adequate habitat for free-roaming horses while maintaining multiple use relationships and thriving natural ecological balance, and provide opportunities for public viewing of wild horses.”
- **Objective:** To maintain wild horse herds at appropriate management levels within herd management areas where sufficient habitat resources exist to sustain healthy populations

at those levels.

- **Objective**: Maintain wild horse population within appropriate management levels (AML) of the HMA.
- **Objective:** Manage wild horses to meet the Wyoming Standards for Healthy Rangelands.
- **Objective:** Identify existing genotypes and phenotypes through recognized means of genetic evaluation and maintain genetic integrity.
- **Objective:** Maintain health of wild horse herds at a level that prevents adverse effects to domestic horse populations.
- **Objective:** Maintain habitat for existing AMLs.
- **Objective:** Conduct all activities in compliance with relevant orders and agreements, including the Consent Decree (August 2003).

<u>Wyoming Greater Sage-Grouse Range-wide Planning Approved Resource Management Plan Amendment (BLM 2025)</u>

The Approved RMP Amendment provides management direction for wild horse and burro management with additional, specific direction regarding how to promote Greater Sage-Grouse (GRSG) habitat conservation when applying the existing BLM policies and approaches for wild horse and burro management. Specifically, the management direction for wild horses and burros seeks to address areas within GRSG habitat where wild horses are a significant causal factor in not meeting Land Health Standards (LHS). Scientific literature has found that managing wild horses and burros at or below appropriate management levels minimizes negative impacts on GRSG population trends (Coates et al. 2021a, Beck et al. 2024). Where GRSG habitat overlaps with wild horse and burro ranges, the Approved RMP Amendment calls for managing wild horse and burro populations within established appropriate management levels and to achieve or make significant progress toward achieving LHS. The management direction also directs the prioritization of wild horse gathers in Primary Habitat Management Area (PHMA), then Stewardship Habitat Management area (SHMA) and General Habitat Management Area (GHMA) unless removals are necessary in other areas to address higher priority issues, including herd health impacts.

- **Management Actions:**
  - Where wild horses and burros overlap with GRSG:
    a. Manage wild horse and burro populations within established Appropriate Management Levels (AML); AND
    b. Incorporate GRSG habitat objectives into wild horse and burro management (e.g., herd management area plans, AML) monitoring, and gather prioritization, with prioritization of such activities in PHMA, then GHMA.
  - Manage wild horse and burros herd management areas in GRSG habitat (or portions of the herd management area overlapping or within GRSG habitat) within the established AML ranges to achieve and maintain GRSG habitat objectives and achieve or make significant progress towards achieving LHS, considering the full suite of approaches to maintain AML, including temporary fertility control and non-reproducing, or partially non-reproducing herds.
  - If GRSG site-scale habitat objectives are not being met in PHMA and GHMA, evaluate AMLs and adjust, if necessary, through the NEPA process where wild horse or burro use is identified as significant causal factor to not meeting LHS, or is a factor in the area not meeting the GRSG habitat objectives.

Rawlins RMP Wild Horse Amendment and Decision Record, approved December 2008

- **Objective: To** manage wild horses within HMAs and maintain a thriving natural ecological balance consistent with other resource issues.
- **Management Actions:**
    - Conduct regular, periodic gathers when necessary to maintain AML.
    - Utilize monitoring and evaluation data to maintain habitat within HMAs
    - Conduct animal health monitoring
    - Employ selective removal criteria during periodic gathers to increase the recognized occurrence of the New World Iberian Genotype and associated phenotype above current levels
    - The AML will remain 125-175 for the Stewart Creek HMA and 60-82 for the Lost Creek HMA
    - Manage wild horses to meet the criteria for Wyoming Standards for Healthy Rangelands

Federal Land Policy and Management Act of 1976 (FLPMA):
FLPMA generally requires that an action under consideration be in conformance with the applicable BLM land use plan(s), and be consistent with other federal, state, and local laws and policies to the maximum extent possible.

Wild Free-Roaming Horses and Burros Act (WFRHBA)
The statute requires the BLM to protect the range from deterioration associated with overpopulation (16 U.S.C. § 1333(b)(2)) and defines excess animals as wild and free-roaming horses and burros that must be removed from an area in order in order to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area (16 U.S.C. § 1332(f)). It also directs the BLM to maintain a current inventory of wild free-roaming horses and burros on public lands. The purpose of the inventory shall be to: make determinations as to whether and where an overpopulation exists and whether action should be taken to remove excess animals; determine appropriate management levels or wild free-roaming horses and burros on these areas of public land; and determine whether appropriate managements should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural control on population levels) (16 U.S.C. § 1333(b)(1)).

BLM Regulations at 43 C.F.R. Part 4700
- 43 C.F.R. § 4700.0-6 (a): Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat (emphasis added).
- 43 C.F.R. § 4710.4: Management of wild horses and burros shall be undertaken with the objective of limiting the animals' distribution to herd areas. Management shall be at the minimum level necessary to attain the objectives identified in approved land use plans and herd management area plans.
- 43 C.F.R. § 4720.1: Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately…

- 43 C.F.R. § 4720.2: Upon written request from a private landowner……the Authorized Officer shall remove stray wild horses and burros from private lands as soon as practicable.
- 43 C.F.R. § 4740.1(a): Motor vehicles and aircraft may be used by the authorized officer in all phases of the administration of the Act, except that no motor vehicle or aircraft, other than helicopters, shall be used for the purpose of herding or chasing wild horses or burros for capture or destruction. All such use shall be conducted in a humane manner. (b) Before using helicopters or motor vehicles in the management of wild horses or burros, the authorized officer shall conduct a public hearing in the area where such use is to be made.

EXISTING CONDITIONS

WILD HORSES

Wild horses can be found throughout the Complex year-round. They exist on grasses such as Sandberg bluegrass (*Poa Secunda*), Needle-and-thread grass (*hesperostipia comata*), and Indian ricegrass (*Achnatherum hymenodes*). In addition to grasses, wild horses in the region have adapted to a diet of some shrubs including winterfat (*Krascheninnikovia lanata*) and saltbush (*Atriplex sp.*). Primary water sources include seeps, springs and livestock wells. Wild horses foal in the spring. This coincides with spring green-up affording the most nutritious forage to nursing mares and foals.

The South Red Desert Complex has an AML range of 185-257. The AML for the Stewart Creek HMA is 125-175 wild horses and for the Lost Creek HMA it 60-82 wild horses. The entire Complex is located in the High Desert District and is managed by the Rawlins Field Office. **Table 1** shows the current approximate HMA acreage, AML range, wild horse populations, and wild horse use within the South Red Desert Complex.

Table 1. South Red Desert Complex Characteristics

Herd Management Area	Total Acres	AML Range	Current Population Estimate	Estimated Wild Horse Use (AUMs)
Stewart Creek	168,000	125-175	366	4,392
Lost Creek	251,000	60-82	63	756
Totals	419,000	185-257	429	5,148

Table 2. 2018 Gather Data

HMA	Total Gathered	Total Released	Fertility Control Treatment
Stewart Creek	**340**	**0**	**0**
Lost Creek	**0**	**0**	**0**

Table 3. 2020 Gather Data

HMA	Total Gathered	Total Released	Fertility Control Treatment
Stewart Creek	**447**	**90**	**46**
Lost Creek	**485**	**25**	**13**

Forage and Fecal Data

The BLM conducted two wild horse fecal matter studies within the complex to gain insights into forage utilization by the three predominant herbivores: antelope, cattle, and wild horses. Fecal samples were collected from these species in the fall of 2007 and spring of 2009. The findings demonstrated that cattle and wild horses exhibited a greater overlap in preferred forage during both seasons compared to the overlap observed between antelope and wild horses.

Table 4. Fecal composition for Fall 2007

Species	Antelope (%)	Cattle (%)	Wild Horses (%)
Agropyron dasystachyum (Elymus)		7.3	8.3
Agropyron spicatum (Pseudoroegneria)		7.3	17.2
Elymus cinereus (Leymus)			9.4
Koeleria cristata (macrantha)			7.8
Poa fendleriana		6.4	4.4
Poa secunda		24.0	25.6
Sporobolus spp.		4.9	
Stipa comata (Hesperostipa)		12.2	21.1
other grasses		2	1.7
Unknown grasses	0.3	2	1.7
Carex spp.		9.8	
Artemisia nova	96.8	19.1	
other shrub	2.9	2.5	
other forb		2	
unknown forb		0.5	2.8

Table 5. Fecal composition for Spring 2009

Species	Antelope (%)	Cattle (%)	Wild Horses (%)
Agropyron spicatum (Pseudoroegneria)		17.6	19.6
Agrostis		9.7	
Deschampsia		5.3	
Elymus cinereus (Leymus)		3.5	6.3
Poa	10.3	11.5	39.1

Stipa comata (Hesperostipa)	3.0	8.8	15.4
Other grasses			3.5
Unknown grasses	1.5	0.9	3.5
Carex spp.		30.8	10.5
Juncus		5.3	1.4
Artemisia nova/tridentata	84.1	1.8	
Other Forb	0.7	2.2	
Unknown forb	0.4	2.6	0.7

Genetic Diversity

A component of the 2018 and 2020 Red Desert gathers was collection of hair follicle samples for genetic testing. The methodology described in the gather EA (DOI-BLM-WY-030-EA15-63) included testing individuals as well as each HMA collectively. The goal was to identify individuals with the New World Iberian genotype so that they could be compared to their photos and a phenotype could be identified. In accordance with the EA samples were submitted to Texas A&M university with specific instructions to analyze individual horses as well as individual HMAs within the complex. The analysis the BLM received includes an assessment of each HMA and the complex as a whole but does not look at individual horses as initially requested. Unfortunately, this omission was discovered too late to rectify. At the herd and complex level, the analysis failed to show a strong link to the New World Iberian genotype. Highest mean genetic similarity at the complex level was with the Light Racing and Riding breeds and the North American Gaited Breeds. The complete analysis can be found on BLMs ePlanning page (Red Desert Complex Herd Management Area Plan & Wild Horse Gather)

The author's brief summary and recommendations follow below:

Summary and Recommendations: Current genetic variability levels of this herd complex is good. The variation results suggest that this is a single, interbreeding herd overall, but that there could be some limited population subdivision. This, if true and maintained, could be beneficial to long term maintenance of genetic diversity. The herd appears to be primarily of mixed breed ancestry.

Current variability levels are high enough that no action is needed at this point and the apparent genetic stability suggest that recent management strategies are working well to maintain diversity.

Upland Soil & Vegetation Conditions

The most common vegetation community is the sagebrush-grass type, which occurs to varying degrees (and with varying composition) throughout the complex. Interspersed throughout the landscape are other communities including salt sage communities, and sagebrush/mountain shrubs. The diversity, vigor, productivity, high native species composition, currently observed and/or documented trends in plant communities, current livestock management, and other land management actions continue to allow conditions of the uplands within the complex to trend

upward. Management of vegetation within the HMAs is and will continue to be a priority for the BLM.

Soils in the South Red Desert Complex are generally sandy loams to sandy clay loams, becoming clay loams to silty clays in flats, drainage bottoms and lakebeds. On and adjacent to rims there is also substantial amounts of small to medium sized rocks. Depth of soils ranges from very shallow on rims, to moderate deep to deep in most locations. Soils in the Separation Flats area and in any water collection sites have high sodium (pH) levels. Vegetation is predominantly sagebrush and mixed grass and forb species. Wyoming big sagebrush is the principal sage species but gives way to basin big sagebrush on deep soils along drainages, black sagebrush on shallow rocky sites, and mountain big sagebrush at higher elevations. In Separation Flats there are extensive saline habitats dominated by greasewood, saltbush, and birdsfoot sagebrush. Grass species are saline tolerant. Scattered limber pine trees are found on the lee sides of Lost Soldier and Stratton Rims, while a few remnant aspen are still present along upper Lost Soldier Creek. Riparian habitat occurs along drainages or point water sources where flows are intermittent to perennial. Noxious weeds have not been a noticeable problem in the complex, with disturbed sites usually the first places they are observed, especially along roads.

Invasive vegetation, primarily cheatgrass, can be found throughout the complex. Infestations can be found in most of the upland systems throughout the assessment area, regardless of vegetation type and elevation. Invasive vegetation is most often addressed through the application of herbicide across the landscape, usually via aerial application methods including fixed and rotary wing aircraft. Ground based herbicide application also occurs in more limited areas such as disturbed areas along roads. To address cheatgrass, the herbicide Imazapic has been and continues to be used, which usually requires a secondary treatment 2-4 years later to address the seedbed that remains in the soil following treatment of the above ground vegetation. At the present time, the review of upland vegetation conditions continues to show generally good overall community health.

To evaluate current upland range conditions, we used terrestrial Assessment, Inventory, and Monitoring (AIM) data to understand current[1] plot-level conditions. From terrestrial AIM, the primary data used was from the line point intercept (LPI) protocol, which provides quantifiable information regarding soil cover, which is comprised of vegetation, litter, rocks, and biological crusts (Herrick et al. 2015). Secondary information ascertained from LPI data is plant composition. Ground cover is important to consider when evaluating site conditions as compared to the expected site reference conditions. Herrick et al. (2009) states that total foliar, litter, and other surface cover (rocks and biological crusts) are positively correlated with soil and site stability and hydrologic function. It protects the soil surface from raindrop impact, thereby limiting detachment of soil particles and physical crusting of the soil surface. Additionally, higher cover generally means there are more obstructions to water flow. We used data from 34 AIM plots across the South Red Desert Complex area, 20 from Lost Creek HMA and 14 from Stewart Creek HMA, which are described in Table 9.

[1] Data used was from 2022-2025

Table 6: South Red Desert Complex Monitoring Plots

HMA	Plot ID	Date visited	Ecological Site	Ecological Site Name	Latitude	Longitude
Lost Creek	RFO2021-063	7/8/2022	*unmapped*	*unmapped*	42.0526755	-107.82681
Lost Creek	RFO2021-043	7/13/2022	*unmapped*	*unmapped*	42.0645214	-107.84622
Lost Creek	20225637101702B1	7/27/2022	R034AY144WY	Saline Upland Green River and Great Divide Basins (SU)	42.0473378	-108.20848
Lost Creek	20225637101702B2	7/27/2022	R034AY144WY	Saline Upland Green River and Great Divide Basins (SU)	42.0489805	-108.20091
Lost Creek	RFO2021-079	8/15/2022	*unmapped*	*unmapped*	42.0532536	-108.1201
Lost Creek	RFO2021-059	8/15/2022	*unmapped*	*unmapped*	42.0039668	-107.90393
Lost Creek	RFO2021-060	8/25/2022	*unmapped*	*unmapped*	42.0710094	-108.2032
Lost Creek	RFO2021-107	6/7/2023	*unmapped*	*unmapped*	42.0830326	-107.92346
Lost Creek	20235637101716B1	9/18/2023	R034AY150WY	Sandy Green River and Great Divide Basins (Sy)	42.061386	-108.32053
Lost Creek	20235637101716B2	9/18/2023	R034AY140WY	Saline Lowland Drained Green River and Great Divide Basins (SLDr)	42.0630212	-108.31539
Lost Creek	20235637101205B1	9/19/2023	R034AY122WY	Loamy Green River and Great Divide Basins (Ly)	42.1332442	-108.09731
Lost Creek	20235637101205B2	9/19/2023	R034AY122WY	Loamy Green River and Great Divide Basins (Ly)	42.1344892	-108.10133
Lost Creek	20235637110015B2	9/23/2023	R034AY104WY	Clayey Green River and Great Divide Basins (Cy)	42.054451	-107.95832
Lost Creek	20235637110015B1	9/23/2023	R034AY104WY	Clayey Green River and Great Divide Basins (Cy)	42.0529127	-107.95133
Lost Creek	20235637101718B2	9/24/2023	R034AY140WY	Saline Lowland Drained Green River and Great Divide Basins (SLDr)	41.9562954	-108.30888
Lost Creek	20235637101718B1	9/24/2023	R034AY140WY	Saline Lowland Drained Green River and Great Divide Basins (SLDr)	41.953316	-108.31388
Lost Creek	RFO2021-143	5/22/2024	*unmapped*	*unmapped*	41.9674992	-108.28082
Lost Creek	RFO2021-123	5/23/2024	*unmapped*	*unmapped*	42.1695639	-108.16081
Lost Creek	RFO2021-NR-034	5/24/2024	*unmapped*	*unmapped*	42.0012437	-108.07608
Lost Creek	RFO2021-159	7/14/2024	*unmapped*	*unmapped*	42.1148739	-108.30817
Stewart Creek	RFO2021-067	6/29/2022	*unmapped*	*unmapped*	42.0740764	-107.66435
Stewart Creek	RFO2021-044	7/14/2022	*unmapped*	*unmapped*	42.262444	-107.7435
Stewart Creek	RFO2021-062	7/15/2022	*unmapped*	*unmapped*	42.1656234	-107.76227
Stewart Creek	RFO2021-076	7/19/2022	*unmapped*	*unmapped*	42.0822693	-107.72066
Stewart Creek	20225637110002B2	7/28/2022	R034AY150WY	Sandy Green River and Great Divide Basins (Sy)	42.0566372	-107.75783
Stewart Creek	20225637110002B3	7/28/2022	R034AY150WY	Sandy Green River and Great Divide Basins (Sy)	42.0583248	-107.7637

Stewart Creek	2022567100410B1	7/31/2022	R034AY158WY	Shallow Clayey Green River and Great Divide Basins (SwCy)	42.2276697	-107.52174
Stewart Creek	RFO2021-NR-013	8/17/2022	*unmapped*	*unmapped*	42.1838702	-107.55688
Stewart Creek	RFO2021-NR-030	6/8/2023	R043BY308WY	Coarse Upland (CU) 15-19" Foothills and Mountains East Precipitation Zone	42.1938789	-107.54389
Stewart Creek	RFO2021-096	6/8/2023	*unmapped*	*unmapped*	42.2496605	-107.73964
Stewart Creek	2023567100402B1	8/31/2023	R034AY246WY	Sands Foothills and Basins West (Sa)	42.1900852	-107.49677
Stewart Creek	2023567100402B2	8/31/2023	R034AY146WY	Sands Green River and Great Divide Basins (Sa)	42.1921868	-107.50235
Stewart Creek	RFO2021-131	5/23/2024	*unmapped*	*unmapped*	42.1463643	-107.72978
Stewart Creek	20245637110118B2	8/17/2024	R034AY150WY	Sandy Green River and Great Divide Basins (Sy)	42.0487341	-107.58117

Tables 7 and 8 depict the relationship between the observed AIM data and reference ecological condition as described in Natural Resource Conservation Service (NRCS) Ecological Site Descriptions. Appendix B includes additional detailed tables which display the community composition and the percentage of bare ground[2], foliar cover[3], and litter cover[4] for each HMA. Of note, sites with invasive annual grasses and forbs will typically have lower bare ground and higher litter cover due to thatch and standing dead litter, and as such, figures at or above reference values may not in and of themselves indicate healthy communities.

[2] Bare ground is reported as the percentage of data points with no canopy layers, litter, or rock fragments located above the soil surface.

[3] Foliar cover is reported as the percentage of data points with live vegetative canopy, this is any time a top or middle canopy layer includes vegetation.

[4] Litter cover is reported as the percentage of data points where herbaceous, woody, or embedded litter is encountered. Total litter does not provide a proportion of a whole, in relation to bare ground and foliar cover, but is an additional data point that is of note.

Table 7: Lost Creek HMA LPI Site Composition[5]

Plot ID	Grass and Grasslikes %	Perennial Forbs %	Shrub %	Bare Ground %	Total Litter %	Invasives[6] %	Soil Stability
RFO2021-063						=	
RFO2021-043						=	
20225637101702B1	<	<	<	=	<	>	<
20225637101702B2	<	<	<	=	<	=	<
RFO2021-079						=	
RFO2021-059						=	
RFO2021-060						=	
RFO2021-107						>	
20235637101716B1	<	<	=	=	=	=	=
20235637101716B2	<	<	=	=	=	=	<
20235637101205B1	<	<	=	>	<	=	=
20235637101205B2	<	<	=	=	=	=	=
20235637110015B2	<	<	<	=	<	=	=
20235637110015B1	<	<	<	=	<	=	<
20235637101718B2	<	<	=	=	<	>	=
20235637101718B1	<	>	=	=	<	=	<
RFO2021-143						=	
RFO2021-123						=	
RFO2021-NR-034						=	
RFO2021-159						=	

5

Key	
=	within reference
<	below reference
>	above reference
	no reference data available

[6] Invasives are not listed in reference condition (above 0 is therefore assumed as above reference condition).

Table 8: Stewart Creek HMA LPI Site Composition

Plot ID	Grass and Grasslikes %	Perennial Forbs %	Shrubs %	Bare Ground %	Total Litter %	Invasives %*	Soil Stability
RFO2021-067						=	
RFO2021-044						=	
RFO2021-062						=	
RFO2021-076						=	
20225637110002B2	<	<	>	=	=	=	=
20225637110002B3	<	<		=	=	=	=
2022567100410B1	<	<	=	<	=	=	<
RFO2021-NR-013						=	
RFO2021-NR-030							
RFO2021-096							
2023567100402B1	<	<	=	=	<	=	=
2023567100402B2	<	<		=	=	=	=
RFO2021-131						=	
20245637110118B2	<	<	=		=	=	=

Key	
=	within reference
<	below reference
>	above reference
	no reference data available

Remote Sensing

While field-gathered data is invaluable in describing fine scale plots at a point in time, traditional methods are limited in their ability to describe landscapes at broader spatiotemporal scales (Robinson, 2019). Models making use of remote sensing data are a valuable complement to, though they do not replace the need for field-gathered data. The Rangeland Analysis Platform (RAP) remote sensing product was used to further evaluate the trend in condition of the HMAs.

RAP is a free online application developed by the University of Montana in collaboration with the NRCS and BLM which combines field data from the NRCS National Resources Inventory and BLM AIM data with historical Landsat records, gridded meteorology, and abiotic land surface data. The application uses Google Earth Engine to produce charts and maps at 30m x 30m resolution (University of Montana, 2021).

Graphs fitted with a trendline were developed using RAP data for percent bare ground, vegetative cover, and annual biomass from 1986 to 2025. This data shows the changes in each range condition attribute since the last HMAP was completed in 1993.

Figure 1: Lost Creek HMA Percent Bare Ground

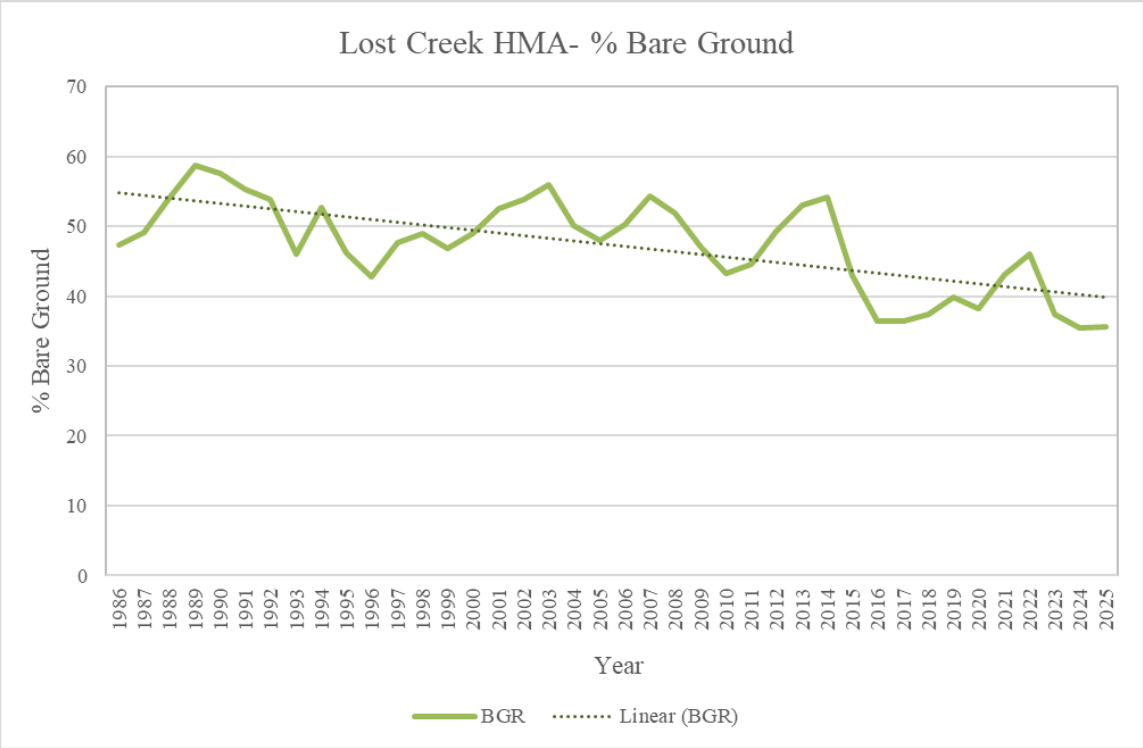


Figure 2: Steward Creek HMA Percent Bare Ground

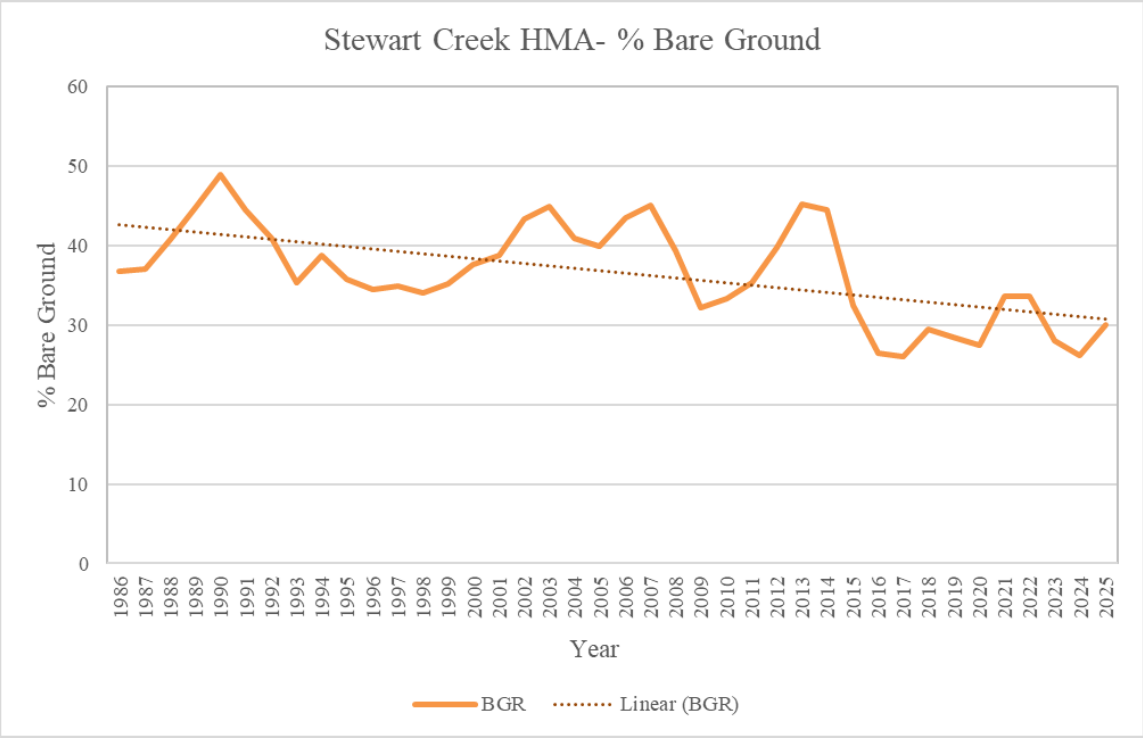


Figure 3: Lost Creek HMA Vegetative Cover

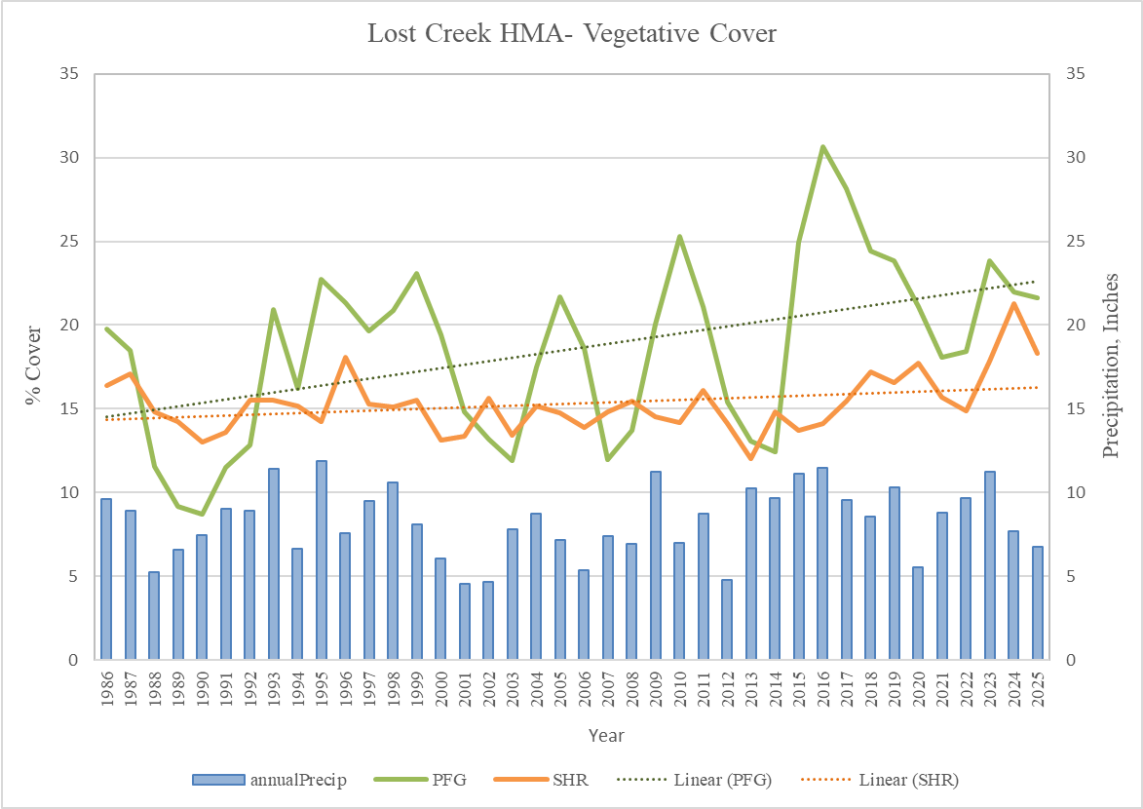


Figure 4: Stewart Creek HMA Vegetative Cover

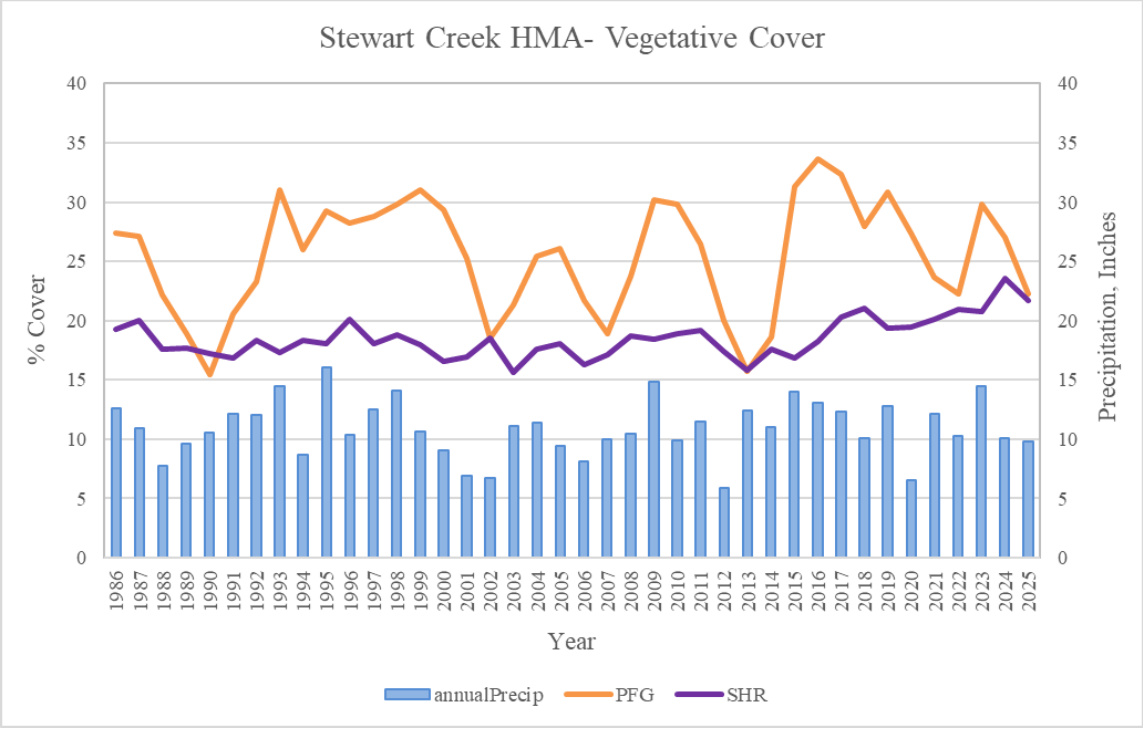


Figure 5: Lost Creek HMA Relative Biomass

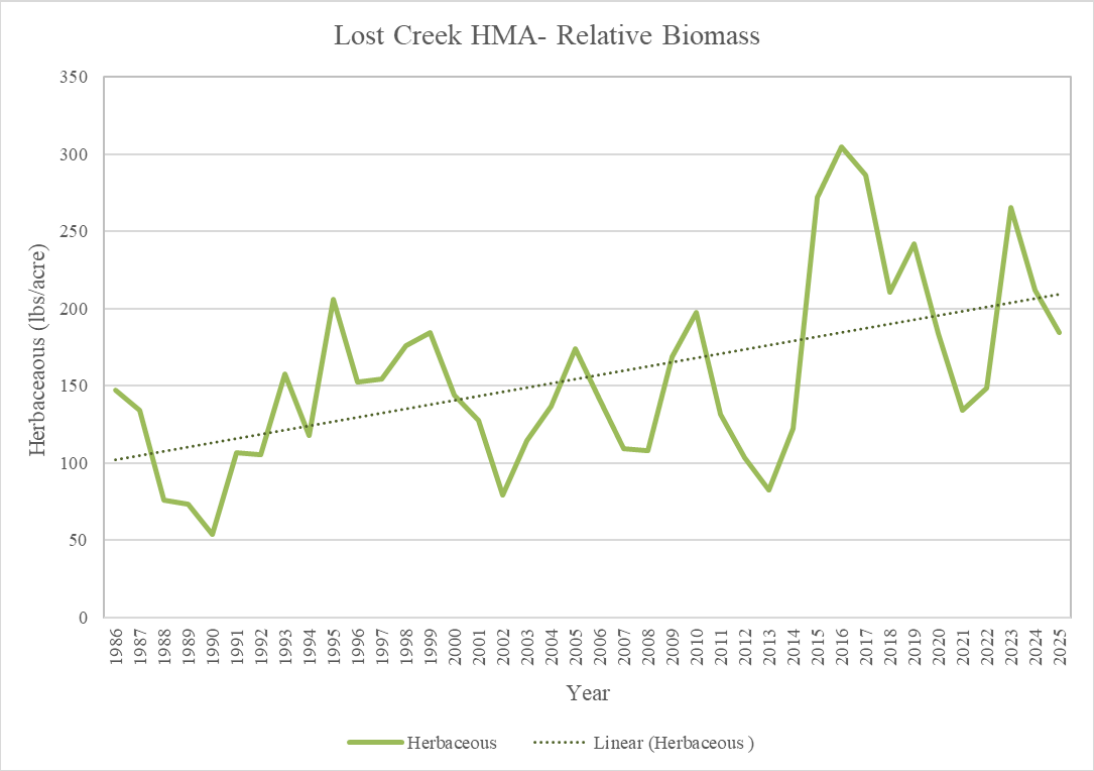
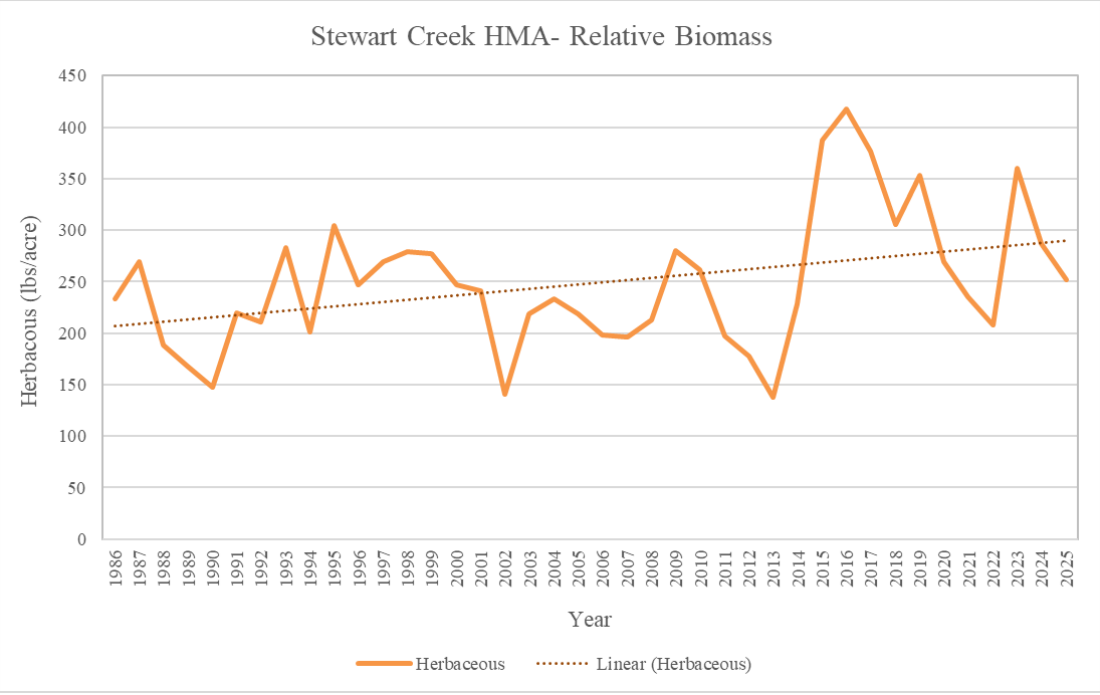


Figure 6: Stewart Creek HMA Relative Biomass



Rangeland Resources

Rangeland resources within the complex have experienced adverse effects as a result of wild horse over-population. The BLM identified wild horses as a contributing factor to riparian conditions in past Land Health Assessments (LHAs). Monitoring data specific to this area indicated that past excessive wild horse populations were linked to historical riparian degradation. Both wild horses and drought have significantly affected riparian habitats in the Stewart Creek and Cyclone Rim allotments. Areas subjected to repeated disturbance without sufficient rest are at greater risk of erosion and loss of soil structure compared to less impacted sites. This is especially true with the year-round nature of wild horse use. Measures such as fencing riparian zones and providing off-site water sources for wild horses have mitigated impacts in the most affected areas.

As outlined in multiple Standards Determination Documents (SDDs), the allowable use level for native perennial grasses, shrubs and riparian species is 50% of the current year's growth by weight, and 55% for perennial non-native seedings. Utilization will be measured at established key grazing areas or other sites representative of the dominant vegetation. Examples of key species include sandberg bluegrass, needle-and-thread grass, indian ricegrass, winterfat and saltbush. Examples of key riparian species include sedges, rushes, bluegrass species, and redtop (bentgrass).

Since the 2012 Great Divide Basin Watershed report, the South Red Desert Complex has had almost full use every year. Despite this near full use of livestock grazing AUMs, the complex has seen a reduction in riparian degradation due to grazing. This is largely due to riparian areas being fenced out most of the year with limited targeted grazing for invasive species control. Because of this, the allotments passed the 2022 watershed evaluation; upgrading the rating for the complex from Functional at Risk (FAR) to Propper Functioning Condition (PFC).

Range Improvements (Water Developments)

The complex contains numerous springs, seeps, and developed water sources that are carefully monitored year-round by the BLM on public land. While some sources provide water throughout the year, many run dry during summer. Large populations of wild horses often strain these key water supplies and riparian zones. To address past damage caused by horse numbers consistently exceeding AML, measures like fencing off riparian habitats and building alternative water sites for horses have helped restore these areas. For example, at Lost Creek, Kinch-McKinney Spring, and Olson Reservoir, fencing and new water supplies have allowed riparian regions to recover from heavy use. In Stewart Creek, freeze-resistant tire tanks were installed to ensure horses have access to water even in winter. The BLM has also carried out range improvement projects to install and safeguard new and existing water sources for wild horses, but these enhancements have faced repeated damage due to excessive horse populations. Chronic overpopulation leads to the degradation of rangeland conditions especially when forage and water are scarce which has triggered emergency horse gathers. Expanding the number of water sources could help distribute wild horse activity more evenly throughout the WHHMA and further protect the landscape.

Livestock Grazing

The complex includes serval livestock grazing allotments. Permitted livestock grazing use in the HMAs include both cattle and sheep. Year-round livestock grazing is permitted but primarily

occurs in the summer and fall. Permitted AUMs have generally been reduced from historical grazing levels over the past decades in the allotments. This has been in part due to persistent drought, competition with wild horses for forage, and the needs of livestock operations. The BLM continues to evaluate allotments for achievement of rangeland health standards, and adjustments to livestock grazing are implemented as appropriate, as grazing term permits are renewed or through annual coordination between BLM and grazing permit holders. Livestock grazing is administered through the regulations at 43 C.F.R. Part 4100 and must be consistent with multiple use allocations set forth in RMPs. Changes to livestock grazing cannot be made with a wild horse management decision.

In Table 7 Animal Unit Month (AUM) means the amount of forage necessary for the sustenance of one cow or its equivalent for a period of 1 month. 43 C.F.R. § 4100.0-5.

Table 7. South Red Desert Complex Grazing Allotments

Allotment	Season of Use & Kind of Livestock	% of Allotment in HMA	Permitted Use (AUM)
Stewart Creek	3/1 – 2/28 Cattle	94%	7,851
Cyclone Rim	3/1-2/28 Sheep, 3/1-2/28 Cattle	81%	27,286

Mining

There are active uranium mines in the complex. Lost Creek In-Situ Recovery (ISR) Mine is the biggest. While no mining is occurring at present in these HMAs, these facilities are expanding and mining operations will resume in the near future.

Oil and Gas

The South Red Desert complex contains several operational oil and gas wells, with no Application for Permit to Drill (APDs) on file. Active exploration in the Stewart Creek HMA remains limited, and there are no major projects anticipated in the foreseeable future. The lost Creek HMA does have active gas wells mostly in the southern portion of the HMA. Given these modest levels of activity, the impact of oil and gas operations on wild horses in the area is minimal.

Recreation

Recreational uses within the complex include but is not limited to the Continental Divide National Scenic Trail, off road vehicle use, camping, hunting, and wildlife and wild horse viewing.

Wildlife

Wildlife species that can be observed in the complex include big game, particularly antelope, mule deer and elk. Raptors are also very abundant and include golden and bald eagles,

ferruginous, red-tailed, and Swainson's hawks, burrowing owls, and harriers. Commonly observed mammals within the complex include coyotes, red foxes, badgers, cottontail and jackrabbits, prairie dogs, ground squirrels, voles and mice. Shorebirds and waterfowl include great-blue herons, avocets, stilts, phalaropes, sandpipers, coots, Canada geese, white pelicans, and various ducks (primarily dabblers). Songbirds vary by habitat type, with sparrows, meadowlarks and horned larks most commonly observed in sagebrush and saltbush areas, and warblers, swallows and flycatcher species observed in riparian habitats. Horned lizards and prairie rattlesnakes are the most common reptiles, while tiger salamanders and leopard frogs are commonly seen amphibian species.

The Complex also provides habitat for numerous BLM Special Status Species. Greater sage-grouse habitat is found throughout the complex and overlaps with Priority and General Habitat Management Areas. There are numerous leks throughout the area with seasonal habitats consisting of breeding, nesting, early brood-rearing, late brood-rearing and winter. Other more common special status species include ferruginous hawk, pygmy rabbit, and numerous sensitive bird and bat species.

Wildfire and Fuels

Fire history within the South Red Desert Complex is characterized by low to moderate occurrence. The last significant fire was in 1992. It was a prescribed fire on Stratton Rim that escaped control and burned most of the rim.

FUTURE MANAGEMENT

Since the passage of the WFRHBA, management knowledge regarding wild horse population levels has increased. For example, it has been determined that wild horses are capable of increasing their numbers by 20% annually, resulting in the doubling of wild horse populations about every 5 years. This has resulted in the BLM shifting program emphasis beyond just establishing AML and conducting wild horse gathers to include a variety of management actions that further facilitate the achievement and maintenance of viable and stable wild horse populations and a thriving natural ecological balance. Management actions include increasing fertility control, adjusting sex ratio, and collecting genetic baseline data to support genetic health assessments.

The AML is defined as the number of wild horses that can be sustained within a designated HMA which achieves and maintains a thriving natural ecological balance in keeping with the multiple-use management concept for the area. The Complex has a cumulative AML range of 185-257 wild horses which has been established through decisions as outlined in this document.

Fertility Control

Population growth suppression measures include the administration of fertility control measures (i.e. PZP vaccines or GonaCon) to released mares and adjustment of sex ratios to achieve a 60 % male to 40% female ratio. When gather operation occur each HMA will be gathered to bring the wild horse population to low AML

The fertility control component will reduce the total number of wild horses that would otherwise be permanently removed from the range. Fertility control-treated mares in the herd at low-AML herd size would allow for management of a total wild horse population within the Complex, reducing population growth rates compared to those of an untreated herd and achieving a thriving natural ecological balance.

Capture Methods

Primary gather method is helicopter drive trapping. While it is the BLM's goal to immediately gather excess wild horses and/or gather wild horses for fertility treatment in a single gather, it is expected that not all horses can be captured because gather efficiencies rarely exceed 80-85% especially in the Complex. As a result, a proportion of wild horses (15-20%+) in the Complex may not be captured or treated over the 10-year period of the Proposed Action. During a gather, horses are identified for removal or release based on age, gender, and/or other characteristics. Mares identified for release would be aged and freeze-marked for identification prior to being released to help identify the animals for future treatments/boosters and assess the efficacy of fertility control treatments.

Management objectives are to achieve and maintain AML within the Complex. Once AML is achieved, the BLM's goal is to implement population growth suppression fertility control vaccines (PZP, PZP-22, GONACON), manage a portion of the population as non-reproducing geldings, and maintain a sex ratio of 60 % males to 40% females. Gather operations would utilize the helicopter drive trap.

MANAGEMENT ISSUES

The key components for maintaining a healthy wild horse population are forage, water, cover, and space. Cover and space are plentiful for wild horses in the complex. Forage and water are generally available through the use of solar wells throughout the complex.

It is important to note that these HMAs are not exclusively used by wild horses. In accordance with BLM's multiple use mandate there are many other legal users of the land within these HMA boundaries. This can make attributing impacts to a specific land use or user difficult. When talking about impacts to forage, water, cover, and space blame is often attributed to the "other" users. As this relates to wild horses, it is clear that wild horses are contributing to impacts on the landscape, but they are not the only contributors. By the same token, other users also contribute to these impacts and cause their own unique impacts which may directly or indirectly affect wild horses. The purpose of this management evaluation is not to parse out impacts by resource uses. The goal of this evaluation is to compare current use with past use, and to identify any future changes relating to wild horses that need to be made.

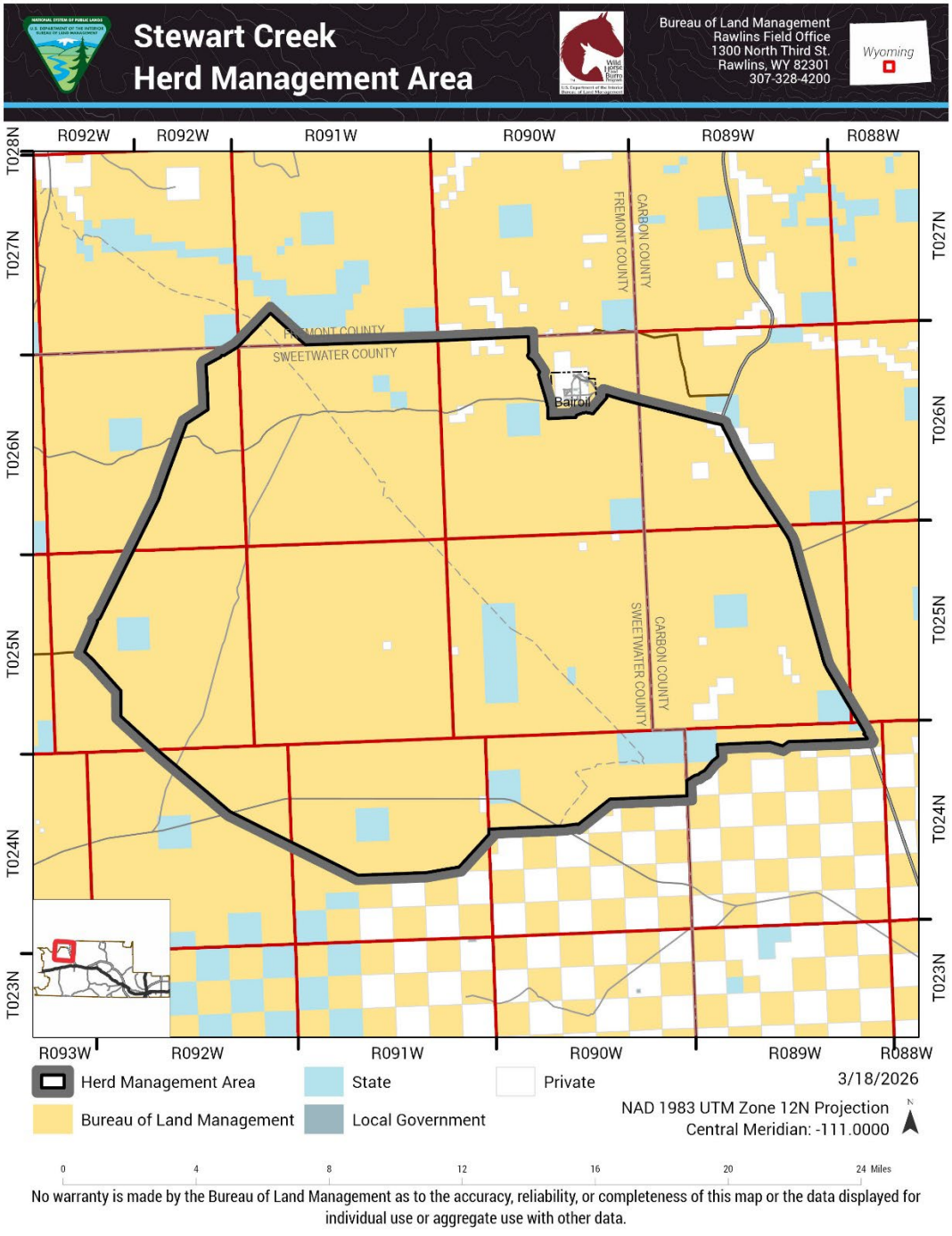
HMAP RECOMMENDATIONS

The BLM intends to prepare an HMAP to guide management of the wild horses and their habitat into the future. The HMAP will address the following management objectives:

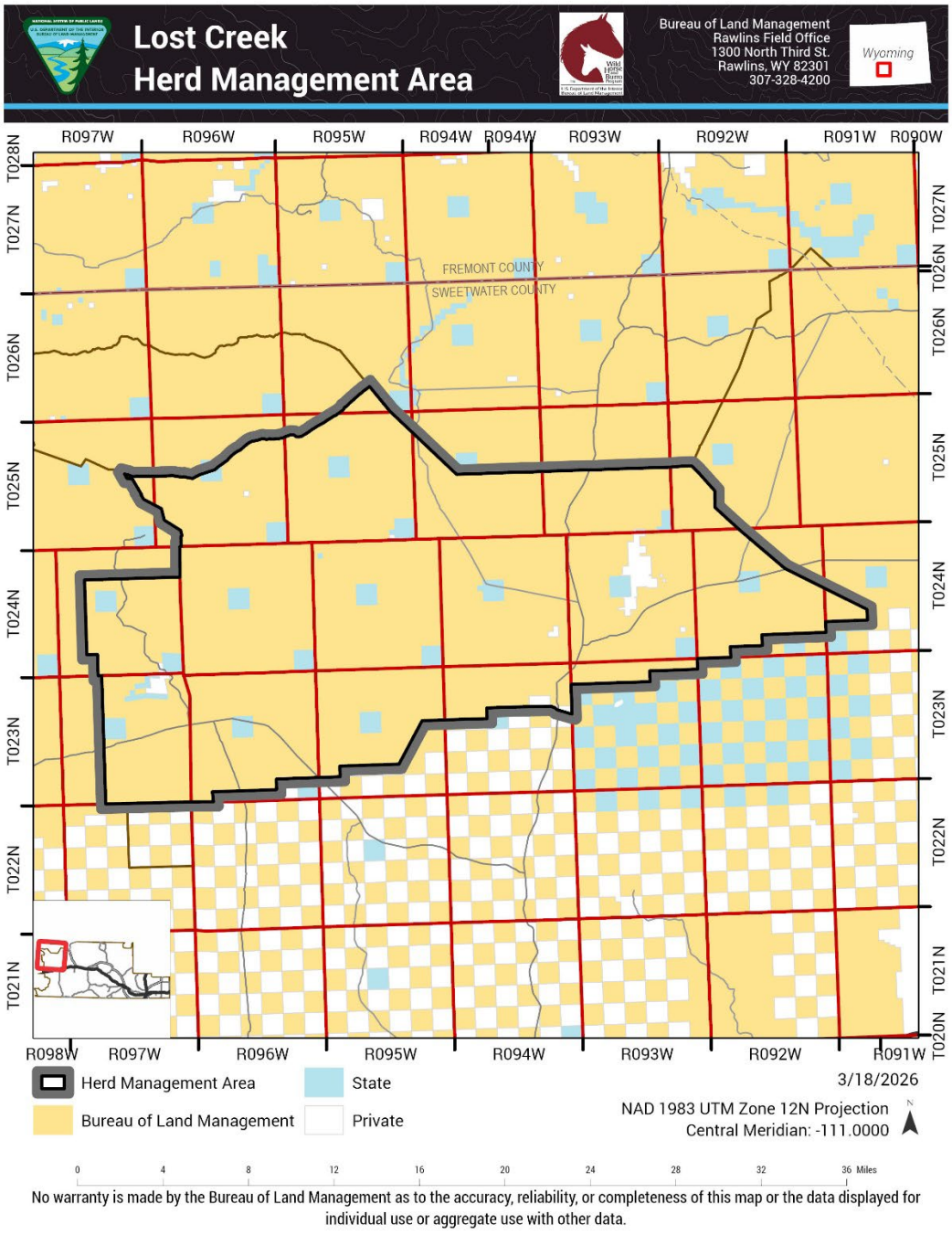
- Manage wild horses within HMAs at AML
- Ensure rangeland health
- Utilize all population growth suppression methods
- Maintain and ensure genetic diversity
- Maintain Greater Sage-Grouse habitat
- Other issues as identified

APPENDIX A: MAPS

Map 1. Stewart Creek Herd Management Area Boundary



Map 2. Lost Creek Herd Management Area Boundary



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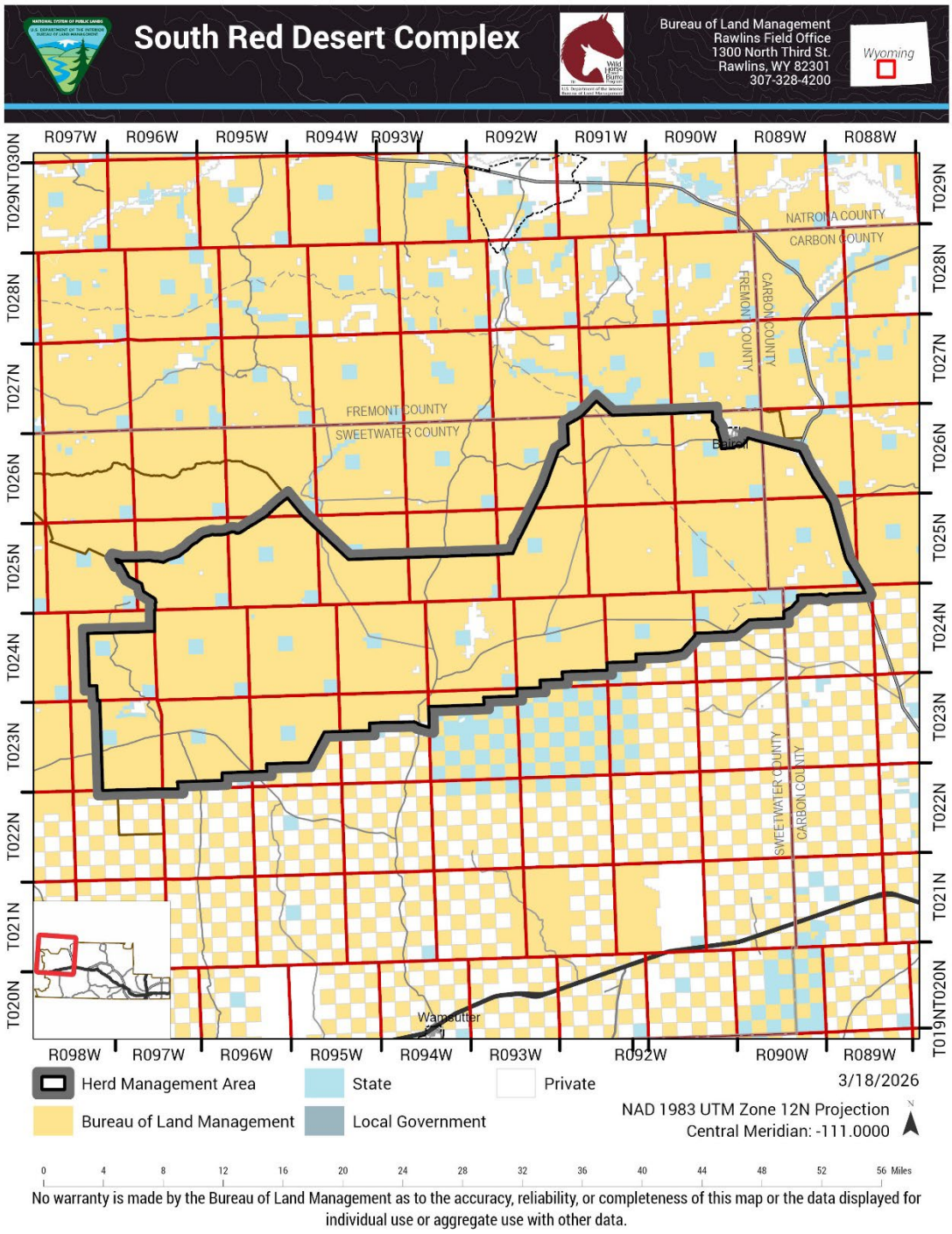
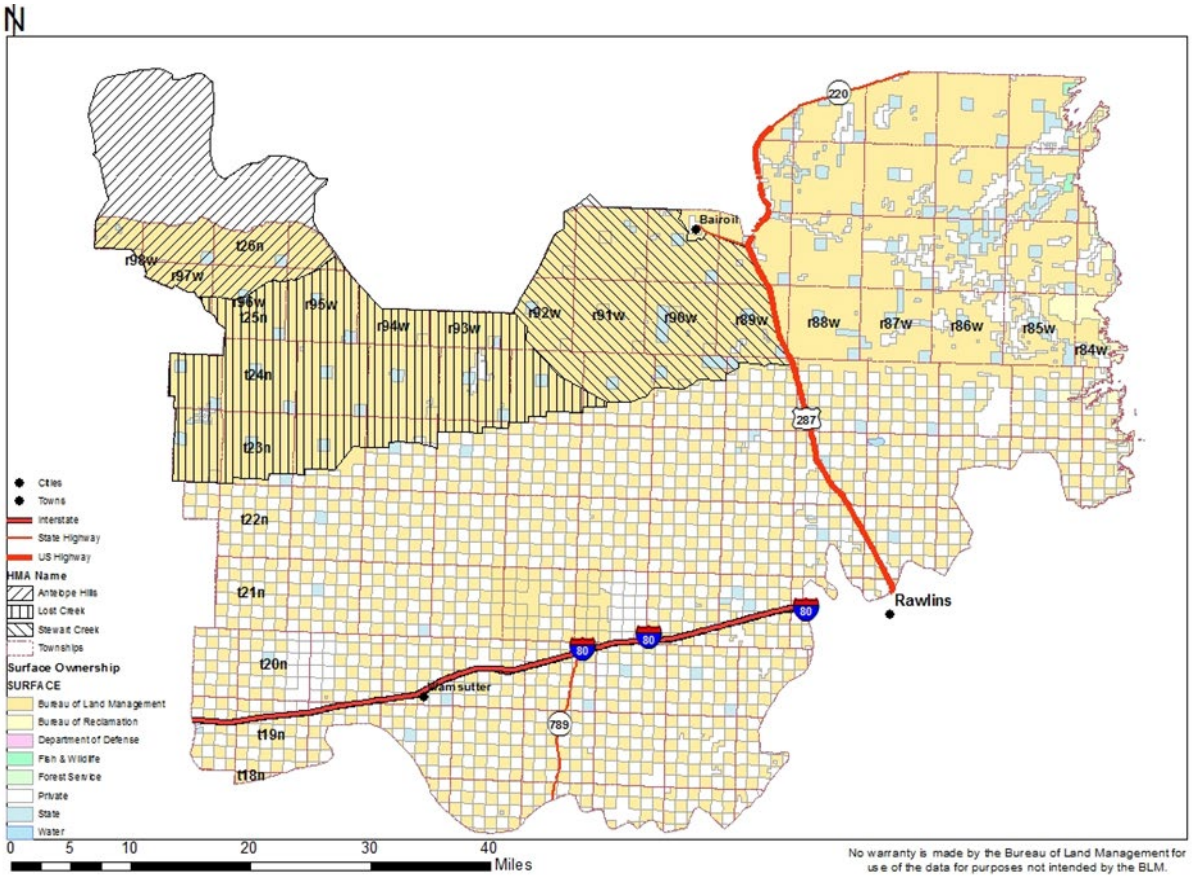
Map 3. South Red Desert Complex Boundary



Map 4. Wild Horse HMAs.



APPENDIX B: DETAILED MONITORING DATA TABLES

Table 8: Lost Creek HMA Species Composition

Plot ID	Grass and Grasslikes %		Perennial Forbs %		Shrub %		Bare Ground %		Total Litter %		Invasives %		Soil Stability	
	Actual	Ref Value	Actual	Ref Value	Actual	Ref Value	Actual	Ref Value	Actual	Ref Value	Actual	Ref Value	Actual	Ref Value
RFO2021-063	28.7		0.7		15.3		40		39.3		0		1.7	
RFO2021-043	20		2		23.3		49.3		26		0		2.9	
20225637101702B1	16.8	25-75%	1	5%	16.8	20-70%	49.5	30-65%	4	10-30%	1		1.6	4+
20225637101702B2	0	25-75%	0	5%	0	20-70%	48.5	30-65%	6.9	10-30%	0		2.3	4+
RFO2021-079	8		8		6.7		66		30.7		0		2.3	
RFO2021-059	33.3		4		18		42		42.7		0		2.3	
RFO2021-060	33.3		6.7		7.3		42		26		0		2.4	
RFO2021-107	18.7		0.7		23.3		28.7		37.3		2.7		4.9	
20235637101716B1	39.6	70-80%	2	5-10%	19.8	10-20%	36.6	20-50%	13.9	10-50%	0		3.6	2.5+
20235637101716B2	16.8	40-75%	0	10%	44.5	15-50%	34.6	25-60%	24.8	15-40%	0		2.8	3.5+
20235637101205B1	20.8	55-70%	0	5-15%	18.8	15-30%	57.4	20-50%	1	10-60%	0		4.4	3+
20235637101205B2	20.8	55-70%	0	5-15%	42.6	15-30%	36.6	20-50%	22.8	10-60%	0		4.6	3+
20235637110015B2	39.6	60-70%	0	15%	4	15-25%	40.6	20-50%	3	10-40%	0		4.8	3.5+
20235637110015B1	50.5	60-70%	1	15%	12.9	15-25%	32.7	20-50%	2	10-40%	0		3.1	3.5+
20235637101718B2	30.7	40-75%	0	10%	18.8	15-50%	56.4	25-60%	8.9	15-40%	1		3.8	3.5+
20235637101718B1	0	40-75%	14.8	10%	17.8	15-50%	55.5	25-60%	8.9	15-40%	0		1.0	3.5+
RFO2021-143	44		2.7		15.3		28		42.7		0		4.8	
RFO2021-123	40		0.7		12		25.3		49.3		0		5.5	
RFO2021-NR-034	7.3		1.3		14		64.7		21.3		0		3.3	
RFO2021-159	19.3		5.3		17.3		30.7		38		0		3.9	

Table 9: Stewart Creek HMA Species Composition

Plot ID	Grass and Grasslikes %		Perennial Forbs %		Shrub %		Bare Ground %		Total Litter %		Invasives%		Soil Stability	
	Actual	Ref Value	Actual	Ref Value	Actual	Ref Value	Actual	Ref Value	Actual	Ref Value	Actual	Ref Value	Actual	Ref Value
RFO2021-067	18.7		0.7		27.3		40		38.7		0		3.4	
RFO2021-044	30		4		41.3		23.3		45.3		0		3.4	
RFO2021-062	26		6.7		14		47.3		24		0		4.4	
RFO2021-076	22		2		21.3		45.3		24.7		0		4.1	
20225637110002B2	29.7	70-80%	1	5-10%	24.8	10-20%	37.6	20-50%	17.8	10-50%	0		3.0	2.5+
20225637110002B3	23.8	70-80%	0	5-10%	20.8	10-20%	45.5	20-50%	10.9	10-50%	0		2.9	2.5+
2022567100410B1	22.8	50-80%	7.9	10%	21.8	10-40%	36.6	40-70%	26.7	10-30%	0		2.7	3+
RFO2021-NR-013	15.3		8.7		2		25.3		42		0		3.8	
RFO2021-NR-030	11.3		11.3		9.3		18.7		29.3		0.7		3.1	
RFO2021-096	27.3		5.3		19.3		19.3		53.3		5.3		2.7	
2023567100402B1	22.8	60-75%	1	5-15%	18.8	10-25%	44.5	20-50%	9.9	20-50%	0		3.4	2.5+
2023567100402B2	21.8	50-70%	2	15%	40.6	15-35%	30.7	30-60%	30.7	10-40%	0		3.0	2.5+
RFO2021-131	21.3		2		29.3		30		38.7		0		5.0	
20245637110118B2	17.6	70-80%	0	5-10%	15.7	10-20%	56.9	20-50%	31.4	10-50%	0		3.2	2.5+