

**REPORT ON WILD HORSE HERDS AND HABITATS IN WESTERN UTAH and EASTERN and CENTRAL NEVADA WITH FOCUS ON UTAH'S SULPHUR and CONGER HERD MANAGEMENT AREAS (BLM Fillmore District Office) (Note: additional photos to be inserted in future indicated within brackets.)**

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Sulphur mustang band in Needle Range, Sulphur HMA, Utah. Copyright, June 2020 by Craig C. Downer.



Sulphur wild mare and colt, Needle Range, Sulphur HMA, Utah. Copyright by Craig C Downer, June 2020.

**Abstract:**

In June of 2020, the author traveled on Highway 50 across Nevada from Carson City to Ely and on to Milford, Utah. He spent about a week making observations of the famed Sulphur Spanish mustangs and their habitat in the Sulphur Herd Management Area (HMA) as well as other wild horse herds and areas. He was joined by fellow conservationist Stephanie Camfield of New Mexico. Twenty-six ecological, 100'-by-20' transects were conducted in the Sulphur HMA. Later the nearby Conger HMA was visited and observations of its wild horses and their habitat were made, including four similar transects. Of the total habitat examined in the Sulphur HMA, it is estimated that 19% needs immediate remedial attention because of damaging impacts that are mainly attributable to livestock and vehicles. Observations of this herd and its habitat does not justify the major BLM-ordered reduction of the rare Sulphur HMA Spanish mustangs to a genetically non-viable level that just occurred in August, 2020. Observations and transects indicated that the Conger HMA herd and habitat is in serious need of restoration.

Both HMAs are suffering serious ecological damage due to uncontrolled livestock, vehicle and other impacts. Following the BLM/USGS transect methods (Pellant et al., 2005), for *Soils and Site Stability* and *Hydrologic Function* attributes, the sum of percentages for *Moderate to Extreme* and *Extreme to Total* is 23.4%, or nearly one fourth, while for the *Biotic Integrity* attribute, the sum of percentages in the *Moderate to Extreme* and *Extreme to Total* is 36.7%, or over a third. Based upon these transects and my visual survey of a much greater area, I urge a significant cut back on livestock and reduction in vehicle impacts, including Off-Highway Vehicles (OHVs) in both HMAs. This is needed to assure truly viable populations of wild horses that are allowed to adapt harmoniously to the ecosystems they inhabit and to stabilize their population by virtue of allowing mature social bands to form and other controls

recognized in a sound Reserve Design (Downer, 2014b) approach to wild horse conservation. The wild horses need to receive a much fairer share of forage, water, shelter and other required habitat necessities. Additional observations were made in various wild horse HMAs adjacent to US Highway 50 especially in Nevada.

An analysis of BLM wild horse Appropriate Management Levels (AML) for population vis-à-vis legal Herd Management Area acreages reveals an extremely unfair treatment of the wild horses within their legal areas. The AMLs permit only a few to several square miles per individual wild horse at mean permitted levels. Livestock are allocated excessive portions of the forage within the HMAs and in surrounding areas. Several other wild horse HMAs in Utah and Nevada are also examined in this regard. All show the same extreme injustice in non-conformance with the core intent of the Wild Free-Roaming Horses and Burros Act (WFHBA). A plea for the restoration of the Sulphur and Conger herds and their habitats along with the true intent of the Wild Free-Roaming Horses and Burros Act (WFHBA) throughout the West is made on its 50<sup>th</sup> anniversary and an elucidation of the wild horses' many positive contributions to ecosystems, economies, wildfire prevention, human society, etc., is given.

### **Introduction:**

I had heard of the famous Spanish mustangs of Utah's Sulphur herd throughout my life, so, being late Spring on Wednesday, June 10<sup>th</sup>, 2020, and with summer coming on, I struck out to see them for myself. On the way I would also check out other unique herds both in western Utah just beyond the eastern border of my native Nevada, nicknamed the Silver State, as well as in Nevada. Driving from Carson Valley on U.S. Highway 50 and passing through Fallon, Austin, Eureka and Ely, it took me all day to reach within twenty miles of the Utah border. I stopped and observed several times along this "Loneliest Highway in America" some of the ever spell-binding wild horses that presented themselves. From a lifetime of searching for and observing these marvelous creatures, I have developed an uncanny ability to spot them – often from miles away and even when backgrounds of rock, soils, sagebrush, pinyon and juniper trees, etc., blend them in so perfectly. Always they are a thrill to see and resuscitate my hope that all is not yet beyond redemption as concerns the Great Rest of Life and humanity's relation thereto.

At midnight I became too tired to travel the further 20 miles to reach Baker; so, I encamped in a sheltering draw edged by tall sagebrush redolent with a natural odor that seemed to protect and purify. It was a beautiful starry night and to rest out again under the open sky and hear the plaintive chorus of coyotes lulled me into a peaceful sleep. This was near Connor's Pass in the Shell Creek Range.

On Thursday, June 11<sup>th</sup> I arose bright and early with the sun to be greeted by gleaming frosty dew. After a quick breakfast of juice and cereal, I headed for Baker – "gateway" to Great Basin National Park. Here I was to spend a few days at the end of my study. Baker is a quaint little town of a few hundred that caters to park visitors as well as locals, including ranchers and miners. Several miles before Baker where Burnt Mill Canyon descends from the Snake Range, I encountered a herd of ca. 20 well-muscled Rocky Mountain Elk with their characteristic furry neck ruffs. They were not spooked when I stopped to take some pictures. They were probably used to tourists with cameras and may even have appreciated being noticed. (Photo of Elk) **[PLACE ELK PHOTO NEAR GBNP]**

After investigating the park headquarters several miles above Baker, I washed up and filled my desert canteen with fresh mountain water then drove on Nevada Route 487 to the Utah border and the old town of Garrison, Utah. This is a ramshackle place, dusty and grave in appearance. It conveyed a sense

of many generations dating back to the pioneers of the mid-1800s. I myself descend from such pioneers, only they landed in Lovelock, Nevada and a number of other places throughout Nevada and California.

From Garrison, I joined Utah Highway 21 striking south past Pruess Lake, where flocks of elegant and energetic ducks and geese were rousing to greet the day. My goal was to get to Milford, Utah, an old western town famous for its rodeos and where my colleague Stephanie Camfield, a conservationist from New Mexico, was awaiting my arrival. This long haul of 76 miles took me over a few ranges, such as Wah Wah and San Francisco, and through some long broad valleys, including Wah Wah, to the southwest of which lay the Sulphur Wild Horse Herd Management Area (HMA), our chief subject of inquiry. In the broad valley, I counted over 20 cows, calves and bulls lying dead along the highway; all had been struck by vehicles. I could see some had died long-suffering deaths. I “dismounted” to document this ongoing atrocity on more than one occasion and here include some of the photos to prove this ongoing tragedy involving local ranchers. Some of these bloody accidents were encountered opposite the Desert Range Experiment Station. Evidence indicated they were killed because of collisions with speeding automobiles and trucks. This serious situation needs to be remedied!



Dead cow killed by auto collision near Utah Highway 21. Photo Copyright June 2020 by Craig C. Downer.

Reaching Milford about 11 AM, I made my way to a park near the rodeo grounds. Here I spotted a spry, middle-aged lady doing calisthenics next to her sporty late Nissan sedan. Stephanie Camfield and I had corresponded for several years and she always wanted to join me on one of my wild horse herd and

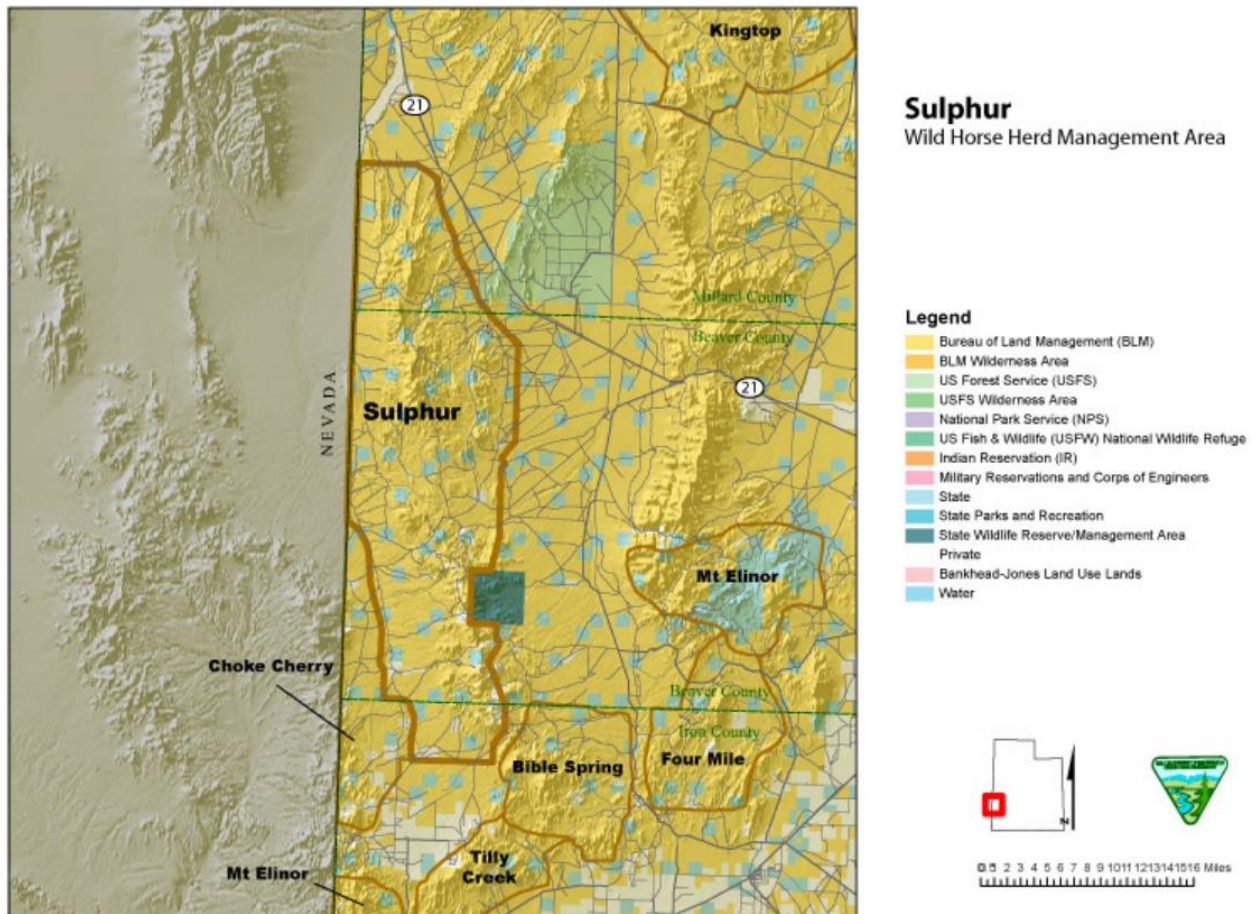
habitat evaluations. It was great having her help with the transects as well as observations of the mustangs. She had recently completed a resource conservation college degree and had worked a lot with horses. The specialty of her thesis concerned judging the health and condition of horses. Hence, her Henneke score estimates of the Sulphur mustangs should be quite accurate.

After midday, we struck west towards the northeastern portion of the Sulphur HMA, leaving her vehicle in Milford, where we would return by evening to camp. Our first stop was Frisco mining town, a historical monument lying just to the south of spectacular, 9,725-foot Frisco Peak in Beaver County and just north of Highway 21. The Frisco Wild Horse HMA lies 15 miles northwest of Milford and contains 60,367 acres, yet BLM officials have bowed to local ranchers and others by assigning an Appropriate Management Level (AML) of only 30 to 60 horses, for a mean of 45. At this unjust average, there would be 1,341 acres, or 2.1 square miles, per individual mustang – an absurd assignment that urgently needs to be remedied. As deeply rooted North American native species, these naturally living horses restore balance and integrity in the Great Basin ecosystem (see Downer, 2014 a and b). A few months after our visit, from September 21 to 28, 2020, a BLM roundup contractor brutally removed 143 of these wonderful mustangs, two of which died. One mare was radio-collared and released for study.

Using binoculars to scan around the old Frisco mining camp, we failed to spot any horses, but a mile further to the west on a side road to the southwest of Highway 21, we took a little hike. Finally, at 12:56 PM, I spotted a band of 10 horses, including buckskins and bays. They were moving along briskly. All were in good condition with Henneke scores of around 4. Perhaps the lead mare or stallion (*aka patron*) had caught the scent of a mountain lion, or they were just anxious to make their day count by visiting certain foraging sites of vital survival importance.

Mustangs are not just “feral” escapees, as their detractors like to label them, for in their natural habitat they quickly revert to “wild type”. Their natural lifestyle is more well-ordered and truer to their real calling and role on Earth than to be merely stuck behind a fence somewhere, or placed within a tiny corral or stall, there to be provided food, water, etc., but merely to do whatever their human owners wish. Often their lives become so restricted and boring that they fall into deep depression – even give up the ghost. How right is it to treat these highly evolved beings so disrespectfully (see Downer, 1977).

After 1 PM, we continued west on Utah Highway 21, passing over two mountain ranges to arrive at 1:33 PM at *Pots-Sum-Pa* Spring Road, a dirt road that would take us southwest into the Sulphur HMA. As we neared the HMA, Single-leafed Pinyon and Utah Juniper trees along with Rabbitbrush, Sagebrush and various other trees, bushes, forbs and grasses increasingly livened the land. Around 2 PM, we entered the northeastern section of Sulphur Wild Horse HMA where our goal was to evaluate this mustang herd and its legal habitat. However, using binoculars, I first spotted a herd of Pronghorn Antelope (*Antilocapra americana*) in the broad valley lying between the Wah Wah Range we had just surmounted and the jagged Needle Range to the west. Though over a mile away, they took off at breakneck speed upon noticing that I had spotted them, attesting to their great visual acuity as well as running velocity – often reaching speeds over 40 mph and in amazing unison among 40 or more. Studies have shown they coexist harmoniously with wild horses (Meeker, 1979). This valley and the Needle Range compose much of the northeastern quarter of the elongated Sulphur HMA. (See Map below).



Courtesy of BLM, available at [www.blm.gov](http://www.blm.gov). Sulphur HMA is defined by the broad, brown line.

Further circumspection revealed that cattle were severely grazing and trampling the section of the HMA where we had landed. Indeed about 35 cattle were present nearby, congregating around a few 20'-diameter, 3' high corrugated-iron water tanks. **[PLACE CATTLE, WATER TANKS, DEGR SOILS PHOTO]**.

Here our first GPS reading was: 38.47163 deg. N, 113.79059 deg. W, elev. 5,684' a.s.l. (EPE 32' [a measure of accuracy]). We observed two standing calves and one resting calf. Quickly noticing us, the one calf arose and they all briskly walked off together in the opposite direction. Clearly, they are sentient beings like us; and their being foisted onto this harsh land to strip the vegetation, calve (give birth), then further graze and grow so as to be soon removed and fattened up in corrals for slaughter makes them as much victims as the ecosystem here. If they were given the chance, they might very well adapt harmoniously given enough generations and come to fill a life-enhancing niche, similar to their close kin, the Buffalo, or Bison . But, at present, this chance is sadly denied them.

Moving on, at 2:44 PM, a band of five horses of typical Spanish appearance, with grulla (mousy grey) coloration were spotted. Three adults and one yearling were all grulla, but one yearling was solid dark brown. The GPS here was 38.45512 deg. N, 113.83181 deg. W, elev. 6,140' a.s.l. (EPE 22').

#### **Overview of Sulphur HMA [PHOTO NEEDLES RANGE EAST SLOPE SULPHUR HMA]**

At this point, an overview of the Sulphur Wild Horse HMA will provide much needed perspective. The Sulphur Springs mustangs, as they are known, preserve significant Spanish Colonial heritage and date

back to the era of early Spanish exploration in the West during the 1500s (see Harris, 2009, also BLM website). Though they have interbred with horses escaped from ranches, etc., this has not diminished their authenticity. Furthermore, natural selection adapts and tailors any group of horses for survival to fashion a “wild type” – and in many areas of the West, this process favors the Spanish mustang, known for its hardiness. The colorations of these horses are commonly dun and grulla (a mossy gray) and they have incurving ears, fawn color on their interiors and with black edges. They also sport dorsal stripes and striped legs, bicolored manes and tails, and often a darker “mask” and even “webbing” over the faces. Their backs often have five rather than six lumbar vertebrae. Stephanie and I frequently observed all are traits among the horses we observed and we agreed that these horses are great national treasures as the following photos prove **[PHOTOS OF SULPHUR SPANISH MUSTANGS SHOW THEIR TRAITS, BEST]**.

Alarmingly, this rare herd is not being allocated anywhere near its fair share of the forage, nor is sufficient water being assured for a viable herd within this legal HMA. Of grave concern, its designated population level (AML) falls far short of its niche space here. Thus, the herd is being disallowed the exuberant, thriving as well as genetically viable population it should be enjoying according to the Wild Free-Roaming Horses and Burros Act, a noble act that should now be celebrating its 50<sup>th</sup> anniversary. Spanning over three of Utah’s western counties: Iron, Beaver and Millard, and centering ca. 50 miles west of Minersville in the Indian Peak and Mountain Home Range, this HMA goes from a low of ca. 6,000’ on Valley Floor to a high of 9,790’ at Indian Peak. Although it contains a full 265,711 acres (230,157 are BLM and 35,554 are other federal, state and private lands), the AML is only 165 low to 250 high, for a mean of 208 horses. Consequently, **at the mean AML, there would be 1,277 acres, or 2 square miles, per individual wild horse within the wild horses’ legal habitat. According to the unanimously passed Wild Free-Roaming Horses and Burro Act of 1971 (WFHBA), this land is supposed to be “principally devoted” to the welfare and benefit of the wild horses themselves, not livestock ranchers.** But, unfortunately, this is all too typical (see Section 2 c of the WFHBA, quoted in Downer, 2014 a). So, it should come as no surprise that from August 15 to 31, 2020, a BLM helicopter gather took place in which 620 horses were rounded up of which 46 reproductively suppressed horses were returned to the HMA. Eight mustang deaths occurred during this brutal roundup. The gathered mustangs were transported to the Axtell Off-Range Contract Wild Horse Facility in Axtell, Utah, where they may still be available for adoption, provided they are still alive.

The Sulphur HMA is home to a diverse array of species and life communities. Notable species include Aspens, Fir, Spruces, Mountain Mahogany, Single-leaf Pinyon and Utah Juniper (together forming woodlands), various species of Sagebrush, two Rabbitbrush species, a variety of grass species (in some places forming meadows), Winterfat (usually present as colonies) and, at lower and drier stretches Shadscale and Four-winged Saltbrush (forming salt desert shrub communities) (see Bureau of Land Management website). Many of the flora and fauna present here are related to Rocky Mountain flora (see Trimble, 1999).

Within the Sulphur HMA, Pinyon-Juniper woodlands provide perfect shelter from frequent harsh weather, whether wind-driven, freezing winter storms or baking hot summer temperatures. This woodland hosts hundreds of diverse species, from seed-dispersing Pinyon Jays and Pinyon Mice to Desert Mule Deer, Rocky Mountain Elk, rabbits, hares, falcons, hawks, eagles and owls. These forests also bind the soils and guard the water tables. Big Sagebrush-associated communities abound in many areas and include important, nutritious foods for herbivores such as Indian Rice Grass, Wheatgrass, Bluegrass and Squirrel-tail Grass. These grasses together with bushes serve to sustain the mustangs and

many other species. Unfortunately, current rancher-spurred government policies have targeted the awesome Pinyon-Juniper woodlands for large-scale reduction in order to convert our public lands into even more of a livestock pasture than they already are (see Molvar, 2021). Similar Sagebrush community reductions are also planned – and for the same narrow-minded reasons (see Downer, 2016 c).

## **METHODOLOGY**

### **Ecological Transects and Observations of Wild Horses in Sulphur HMA**

Methodology for transects taken from USGS field manual: [Interpreting Indicators of Rangeland Health](#) (Pellant et al., 2005).

*Departure from Expected* evaluations are performed for three ecological *Attributes: Soil and Site Stability*, abbreviated as S, *Hydrologic Function*, abbreviated as H, and *Biotic Integrity*, abbreviated as B. Such evaluations are made by examining 17 Indicators and assigning each one of these to one of the following ratings: None to Slight (N-S), Slight to Moderate (S-M), Moderate (M), Moderate to Extreme (M-E) and Extreme to Total. (See Evaluation sheets below.) The 26 transects for Sulphur HMA are presented in Appendix A and the four transects for Conger HMA are in Appendix B. The summarized findings for all the transects made in June, 2020, are presented as graphs with corresponding tables in Figures 1, 2 and 3 below.

#### **Departure from Expected Definitions:**

**Expected** = Healthy as appropriate for the site being evaluated.

#### **Departures:**

**None to Slight:** A thriving condition appropriate and expected for this site and its soils, precipitation, temperature, seasons, elevation, latitude, etc.

**Slight to Moderate:** Slightly to moderately higher than expected for the site. Some disturbances but not too serious.

**Moderate:** Some significant disturbances. Moderately higher than expected for the site.

**Moderate to Extreme:** Conditions are serious and need remedy. Moderate to much higher than expected for the site.

**Extreme to Total:** Very seriously disturbed. Much higher than expected for the site. Urgent and immediate need for remedy.



**ECOLOGICAL EVALUATION SHEET SHOWING METHODOLOGY FROM PELLANT et al. (2005)**

56 Interpreting Indicators of Rangeland Health — Technical Reference 1734-6, Version 4

**Evaluation Sheet (Front)**

Aerial Photo: \_\_\_\_\_

Management Unit: \_\_\_\_\_ State: \_\_\_\_\_ Office: \_\_\_\_\_ Range/Ecol. Site Code: \_\_\_\_\_  
(Allotment or pasture)

Ecological Site Name: \_\_\_\_\_ Soil Map Unit/Component Name: \_\_\_\_\_

Observers: \_\_\_\_\_ Date: \_\_\_\_\_

Location (description): \_\_\_\_\_

T. \_\_\_\_\_ R. \_\_\_\_\_ or \_\_\_\_\_ N. Lat. Or UTM E \_\_\_\_\_ m Position by GPS? Y / N  
 UTM Zone \_\_\_\_\_ Datum \_\_\_\_\_

Sec. \_\_\_\_\_ W. Long. \_\_\_\_\_ N \_\_\_\_\_ m Photos taken? Y / N

Size of evaluation area: \_\_\_\_\_

Composition (Indicators 10 and 12) based on: \_\_\_Annual Production, \_\_\_Cover Produced During Current Year or \_\_\_Biomass

Soil/site verification:	
Range/Ecol. Site Descr., Soil Surv., and/or Ecol. Ref. Area:	Evaluation Area:
Surface texture _____	Surface texture _____
Depth: very shallow __, shallow __, moderate __, deep __	Depth: very shallow __, shallow __, moderate __, deep __
Type and depth of diagnostic horizons:	Type and depth of diagnostic horizons:
1. _____ 3. _____	1. _____ 3. _____
2. _____ 4. _____	2. _____ 4. _____
Surf. Efferv.: none __, v. slight __, slight __, strong __, violent __	Surf. Efferv.: none __, v. slight __, slight __, strong __, violent __
Parent material _____ Slope _____% Elevation _____ ft.	Topographic position _____ Aspect _____
Average annual precipitation _____ inches	Seasonal distribution _____

Recent weather (last 2 years) (1) drought \_\_\_\_, (2) normal \_\_\_\_, or (3) wet \_\_\_\_.

Wildlife use, livestock use (intensity and season of allotted use), and recent disturbances:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Off-site influences on evaluation area:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Criteria used to select this particular evaluation area as REPRESENTATIVE (specific info. and factors considered; degree of "representativeness")

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Other remarks (continue on back if necessary)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Reference: (1) Reference Sheet: \_\_\_\_\_; Author: \_\_\_\_\_; Creation Date: \_\_\_\_\_  
 or (2) Other (e.g., name and date of ecological site description; locations of ecological reference area(s)) \_\_\_\_\_

## Evaluation Sheet (Back)

Departure from Expected	Code	Instructions for Evaluation Sheet, Page 2
None to Slight Slight to Moderate Moderate Moderate to Extreme Extreme to Total	N-S S-M M M-E E-T	(1) Assign 17 indicator ratings. If indicator not present, rate None to Slight. (2) In the three grids below, write the indicator number in the appropriate column for each indicator that is applicable to the attribute. (3) Assign overall rating for each attribute based on preponderance of evidence. (4) Justify each attribute rating in writing.
Indicator	Rating	Comments
1. Rills	S H	
2. Water-flow Patterns	S H	
3. Pedestals and/or terracettes	S H	
4. Bare ground _____%	S H	
5. Gullies	S H	
6. Wind-scoured, blowouts, and/or deposition areas	S	
7. Litter movement	S	
8. Soil surface resistance to erosion	S H B	
9. Soil surface loss or degradation	S H B	
10. Plant community composition and distribution relative to infiltration	H	
11. Compaction layer	S H B	
12. Functional/structural groups	B	
13. Plant mortality/decadence	B	
14. Litter amount	H B	
15. Annual production	B	
16. Invasive plants	B	
17. Reproductive capability of perennial plants	B	

Indicators of Rangeland Health — Technical Reference 1734-6, Version 4

<b>E-T</b>	<b>M-E</b>	<b>M</b>	<b>S-M</b>	<b>N-S</b>	

**Attribute Rating Justification**  
Soil & Site Stability:

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\_\_\_\_\_

\_\_\_\_\_

S (10 indicators):  
Soil & Site Stability  
Rating: \_\_\_\_\_

<b>E-T</b>	<b>M-E</b>	<b>M</b>	<b>S-M</b>	<b>N-S</b>	

**Attribute Rating Justification**  
Hydrologic Function:

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

H (10 indicators):  
Hydrologic Function  
Rating: \_\_\_\_\_

<b>E-T</b>	<b>M-E</b>	<b>M</b>	<b>S-M</b>	<b>N-S</b>	

**Attribute Rating Justification**  
Biotic Integrity:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

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\_\_\_\_\_

B (9 indicators):  
Biotic Integrity  
Rating: \_\_\_\_\_

Interpreting

## SUMMARY OF TRANSECT RESULTS FOR:

**SULPHUR WILD HORSE HMA, N = 26, 100' X 20', 6/11-14/2020. (See FIGURE 1 for Table & Graph; See Appendix A for detailed Transect observations.)**

**Soil and Site Stability:** None to Slight, 7/26 = 27%; Slight to Moderate, 12/26 = 46%; Moderate 2/26 = 8%; Moderate to Extreme, 4/26 = 15%; Extreme to Total, 1/26 = 4%

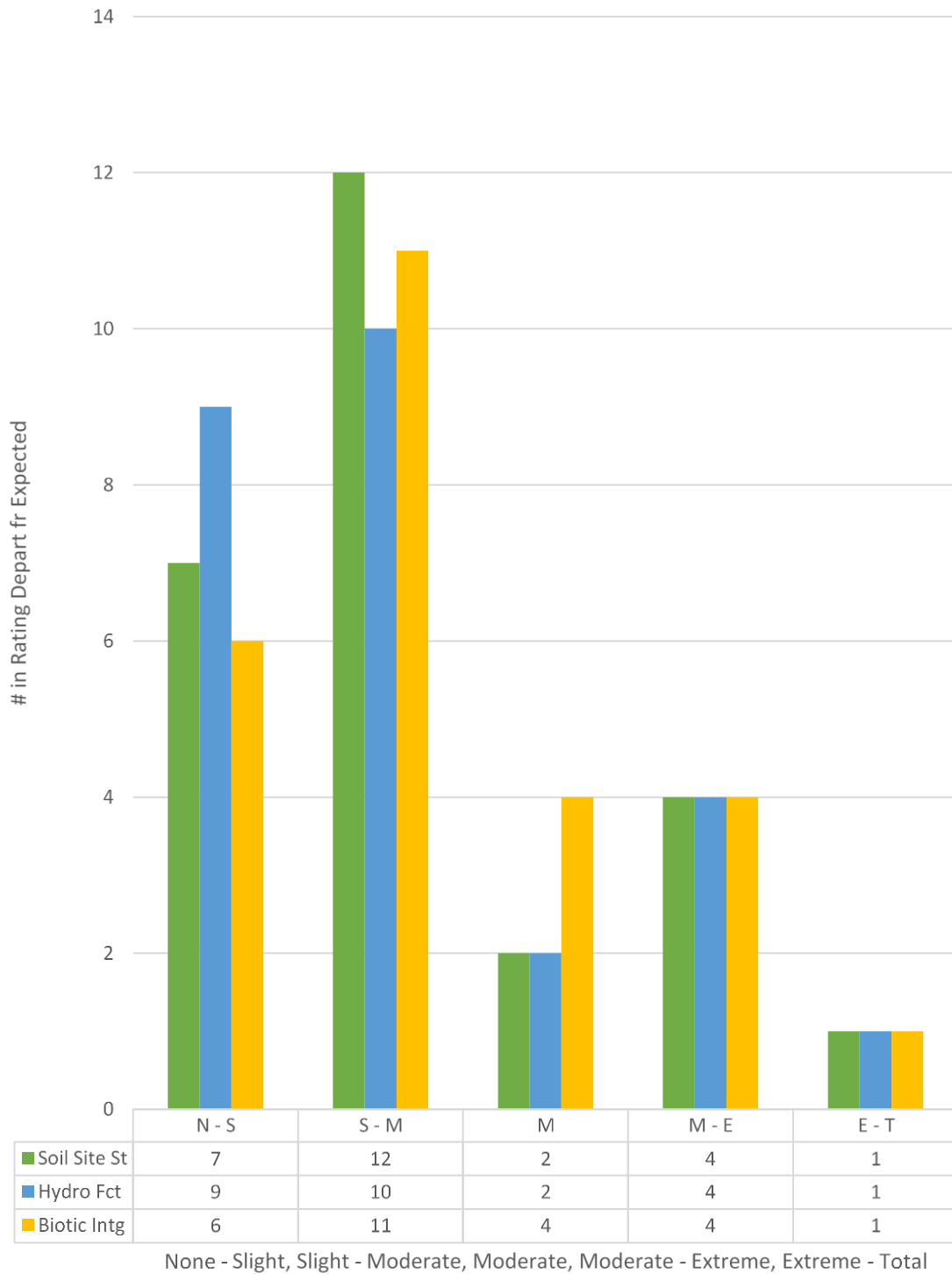
**Hydrologic Function:** None to Slight, 9/26 = 35%; Slight to Moderate, 10/26 = 38%; Moderate 2/26 = 8%; Moderate to Extreme, 4/26 = 15%; Extreme to Total, 1/26 = 4%

**Biotic Integrity:** None to Slight, 6/26 = 23%; Slight to Moderate, 11/26 = 42%; Moderate 4/26 = 15%; Moderate to Extreme, 4/26 = 15%; Extreme to Total, 1/26 = 4%

**Conclusion:** Of the total habitat examined, 19% needs immediate remedial attention because of damaging impacts that are mainly attributable to livestock and vehicles. This does not justify the great reduction of the intrinsically valuable Sulphur HMA Spanish mustang herd to a genetically non-viable level. BLM has failed in its duty to defend the rights and well-being of these rare and much-appreciated horses. But the good news is that these horses can be reinstated and the livestock and vehicle impacts can be reduced. By employing a sound Reserve Design strategy, the Sulphur mustangs could be restored to genetically viable levels while the livestock could be reduced, along with the vehicle and other impacts. For more on how the Reserve Design plan could be intelligently and successfully tailored here, go to [https://thewildhorseconspiracy.org/documents/reserve\\_design.pdf](https://thewildhorseconspiracy.org/documents/reserve_design.pdf).

In the Sulphur HMA, officials pit wild horses against big game animals, especially Mule Deer, Rocky Mountain Elk, Pronghorn and Bighorn Sheep. Competition for forage with the horses is reported in Spring and Summer, and is said to be particularly critical during early spring months for does and their nursing fawns. Also, increasing drought is cited as dramatically increasing competition between wildlife and wild horses. But missing here is a greater overview. There is little mention of the natural predators of big game animals and wild horses. For the Sulphur HMA, the principal predator is the Mountain Lion, but Coyotes are also present and act as predators of young, weakened or declining older horses, etc. Potentially Wolves and even Bears could also refill their age-old predator roles. Yet, these natural predators are being either greatly reduced or eliminated in order to favor livestock and hunter interests to "maximize harvest". Why is all this being ignored in most official reports and statements by BLM, Utah resource and wildlife agencies, livestock and hunter organizations, etc.? Why have wild horses become targets for extreme minimization in their legal areas? Perhaps the answer could be provided by considering other dishonest and unjust policies such as those that subjugated and dismantled Native American tribes and their more nature-harmonious ways of life, aka "broken treaties". In the area of the Sulphur and nearby HMAs these would include the Paiute, Goshute and Shoshone along with native Wolves, Bears, Coyotes, Pumas, Eagles and a host of other species.

Sulphur Wild Horse HMA (Utah) Habitat Evaluations N=26  
 transects @ 100x20 feet. June, 2020. by Craig Downer



**FIGURE 1: SULPHUR WILD HORSE HMA ECOLOGICAL TRANSECT RESULTS, TABLE AND GRAPH**

**CONGER WILD HORSE HMA, UTAH (See FIGURE 2 for Table & Graph and APPENDIX B for detailed transect observations.)**

North of Sulphur HMA, 75 miles west of Delta, Utah, bounded by old U.S. Highway 50 and U.S. Highway 6 (Cowboy Pass) on south, Route 14 on west and Route 13 on east. Size is 170,993 acres, yet AML is only 40 to 80 wild horses. Therefore, at the mean AML of 60, there would be 2,850 acres, or 4.5 square miles, per individual wild horse here in these wild horses' legal area! This assignment makes extreme mockery of the WFHBA. Additionally, the great majority of the resources here are allocated to ranchers' livestock and a national off-highway-vehicle recreation site has been established with all of its pounded AHV trails. Its official name, etc., I acquired from one of the government signs as follows: "Conger ATV Trail, sponsored by Millard Co., Utah, BLM-Utah, UTAH OHV TRAILS, BLM and Locally Designated Area". In the Conger HMA, this tremendous OHV activity greatly reduces forage and watershed health for the wild horses and other wildlife, animals and plants, large and small. (No map was provided for Conger HMA on BLM website, but an overview map of Utah HMAs is given.) It bears noting that a BLM wild horse gather, or roundup, in the nearby 235,005-acre Confusion HMA occurred from November 29 to December 13, 2020, in which 304 horses were taken and five died. The AML here is 70 to 115 for a mean of 93 horses that corresponds to 2,527 acres, or 3.94 square miles, per individual wild horses. This is utterly outrageous, entirely a subversion of the true intent of the WFHBA! **[PHOTOS CONGER HMA, WH'S, SEALED CONGER SPRING]**

**SUMMARY OF TRANSECT RESULTS FOR:**

**CONGER WILD HORSE HMA, N = 4, 100' X 20', 6/2020 (See FIGURE 2 and APPENDIX B)**

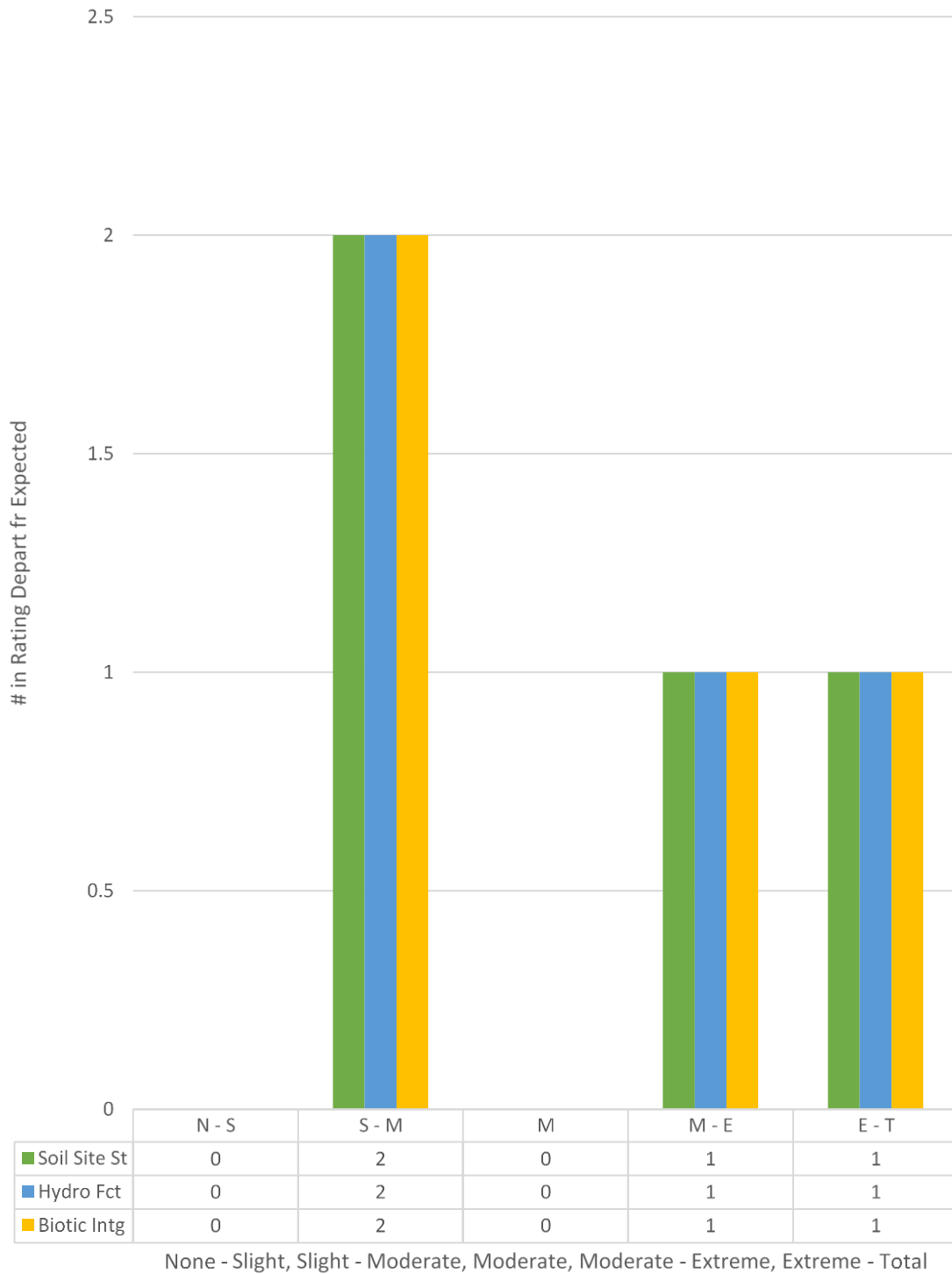
**Soil and Site Stability:** None to Slight, 0/4 = 0%; Slight to Moderate, 2/4 = 50%; Moderate, 0/4 = 0%; Moderate to Extreme, 1/4 = 25%; Extreme to Total, 1/4 = 25%

**Hydrologic Function:** None to Slight, 0/4 = 0%; Slight to Moderate, 2/4 = 50%; Moderate, 0/4 = 0%; Moderate to Extreme, 1/4 = 25%; Extreme to Total, 1/4 = 25%

**Biotic Integrity:** None to Slight, 0/4 = 0%; Slight to Moderate, 2/4 = 50%; Moderate, 0/4 = 0%; Moderate to Extreme, 1/4 = 25%; Extreme to Total, 1/4 = 25%

**Conclusion:** Although the transects are limited in number, the Conger HMA shows evidence of being in serious need of immediate remedy. From my general inspection as an ecologist, as well as from the fact that 50% of the transects showed *Moderate to Extreme* (25%) and *Extreme to Total* (25%) impacts and for all three ecological attributes: Soil and Site Stability, Hydrologic Function and Biotic Integrity, I justify this conclusion. The main destructive factors noticed were: (1) livestock trampling and overgrazing and (2) vehicles damaging the soils, aquifers and flora and fauna, both due to on-road and off-road impacts. I conclude that the relatively few Conger wild horses are being squeezed and set up, falsely blamed for damaging impacts and, consequently, nearly eliminated. This whole scenario needs to change; the wild horses need to receive fairer and more equitable resource allocation as well as herd number, i.e. AML assignment. There needs to be an immediate reduction in livestock and vehicle usage in the HMA. The wild horses here need to make a comeback concomitant with a *positive promotion* by BLM officials. This scenic wild-horse-containing area could become a major ecotourist mecca.

Conger Mt Wild Horse HMA (Utah) Habitat Evaluations N=4  
 transects @ 100x20 feet. June, 2020. by Craig Downer



**FIGURE 2: CONGER WILD HORSE HMA ECOLOGICAL TRANSECT RESULTS, TABLE AND GRAPH**

**SUMMARY OF COMBINED TRANSECT RESULTS FOR:**

**COMBINED SULPHUR and CONGER WILD HORSE HMAs, N = 30, 100' X 20', 6/11-17/2020 (See FIGURE 3 for Table and Graph.)**

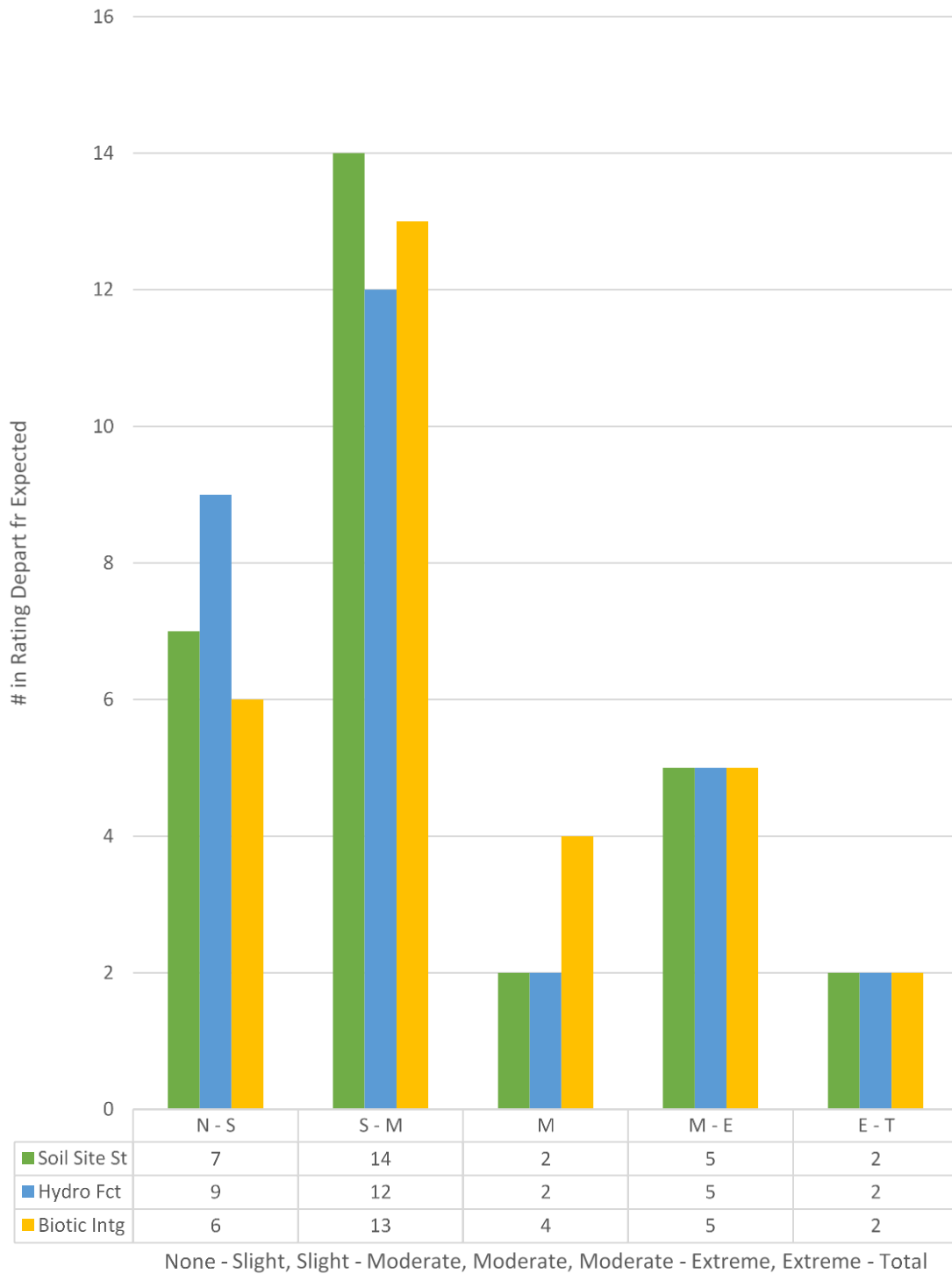
**Soil and Site Stability:** None to Slight, 7/30 = 23.3%; Slight to Moderate, 14/30 = 46.7%; Moderate, 2/30 = 6.7%; Moderate to Extreme, 5/30 = 16.7%; Extreme to Total, 2/30 = 6.7%

**Hydrologic Function:** None to Slight, 9/30 = 30%; Slight to Moderate, 12/30 = 40%; Moderate, 2/30 = 6.7%; Moderate to Extreme, 5/30 = 16.7%; Extreme to Total, 2/30 = 6.7%

**Biotic Integrity:** None to Slight, 2/30 = 6.7%; Slight to Moderate, 13/30 = 43.3%; Moderate, 4/30 = 13.3%; Moderate to Extreme, 5/30 = 16.7%; Extreme to Total, 6/30 = 20%

**Conclusions:** Taken together, both of these BLM Wild Horse HMAs showed serious damage to the ecosystem due to uncontrolled livestock and vehicle impacts. For *Soils and Site Stability* and the *Hydrologic Function* attributes, the sum of percentages for *Moderate to Extreme and Extreme to Total* is 23.4%, or nearly one fourth, while for the *Biotic Integrity* attribute, the sum of percentages in the *Moderate to Extreme and Extreme to Total* is 36.7%, or over a third. While I realize that this is a relatively small, rather than an exhaustive evaluation, judging from my visual survey of a much greater area than is just covered by the transects, I conclude as follows. There is a most urgent need to cut back significantly on livestock and vehicles in these two HMAs and to allow for greater, more truly viable populations of wild horses that have allocated to them a much fairer share of the forage, water, shelter and other required habitat necessities in order to ensure their true thriving as well as their complementation of and coadaptation with the other species of fauna and flora present here. This would lead to their long-term viability and the exuberant and healthy realization of a thriving wild-horse-containing ecosystem, as the WFHBA intends.

Sulphur & Conger Wild Horse HMAs (Utah) Habitat Eval.  
 N=30 transects @ 100x20 feet. 6/2020. by Craig Downer



**FIGURE 3: SULPHUR & CONGER WILD HORSE HMA ECOLOGICAL TRANSECT RESULTS, TABLE & GRAPH**



## **IMPORTANT NATURAL HISTORY POINTS CONCERNING THE WILD HORSES**

Wild horses are highly mobile animals, dispersing their foraging activities broadly among many nooks and crannies of the communities they inhabit. This they do according to age-old survival instincts that prevent vegetative overuse, soil erosion and damage to watering areas. Naturally living horses help the natural ecosystem through their enrichment and building of soils, dispersal of intact seeds of a great variety, which horse droppings help germinate, and by many other means (see Downer, 2014 a & b). Being large powerful animals, they open up thickets and make frozen-over water and food sources available by breaking icy crusts. Of great importance today, they reduce dry flammable vegetation that acts as tinder for sparking what often become catastrophic wildfires. Naturally living horses contribute a great service to the entire life community; their positives must not be ignored!

The way wild horses live is beautiful and harmonious. Over the four seasons, each band rotates its occupation of different portions of its home range so as to allow the natural spring-back of the plants upon which they depend. They instinctively practice this natural rest-rotation. It is part of their age-old attunement with the many other species with which they have co-evolved for centuries, thousands and even millions of years.

Paleontology teaches that the horse (*Equus caballus*) is a deeply rooted North American species (as are its genus and family) (MacFadden, 1992). It follows that a great portion of plants and animals upon this continent have harmoniously coevolved with horses and other equids. They depend upon each other in many ways. I believe they even enjoy each other's company and, individually and that this fulfills an even more sublime purpose in life. The natural freedom of horses and their having adequate habitat including space in which to roam and thrive far into the future is, to me and many others, of paramount importance! The WFHBA is an inspired law that answers the call to sacred justice for all of life – not man apart! Its core intent was wonderfully conceived and should be honored (see Downer, 2014 a, esp. Introduction, Chapters III, IV and VII).

On the public lands today, water is being overly restricted to favor livestock and disfavor mustangs through extensive fencing projects, over-pumping of aquifers to sprinkler-irrigate alfalfa fields, etc. The drying of major springs of importance to the wild horses and other wildlife, as occurred during the summers of 2000 to 2004, 2007 to 2008, 2012 to 2015 as well as subsequent years, is related to the squeeze that is being put on the wild horses by overbearing livestock, as well as enormous mining and energy-extraction operations. While BLM officials claim such "multiple-use" activities justifies their extremely low wild horse AML population and AUM foraging designations, the greater story is that this is being done to perpetuate the monopolization of public land resources by the ranchers, etc.! And usually always ignored is the benign role wild horses play in building important "living sponge" soils that augment water tables as well as the damaging effect of too many livestock, enormous mines, etc.

## **THE NATIONAL WILD HORSE AND BURRO ADVISORY BOARD SHOULD POSITIVELY OVERSEE THE WFHBA AND STOP SUBVERTING THIS NOBLE LAW'S TRUE INTENT**

The current composition of this board is extremely biased against wild horses and burros *in the wild*.

The newly appointed Public Interest appointee to the National Wild Horse and Burro Advisory Board is Tammy Pearson, a Beaver County, Utah rancher appointed in the last days of the Trump administration.

This choice to represent the public interest in wild horses and burros is highly contrary to the WFHBA. Pearson pushed to allow Beaver County, Utah, to illegally remove wild horses from BLM land. She also pushed for passage of the “Wild Horse Oversight Act” bill to turn management of wild horses and burros on federal land over to Western states. She has livestock grazing permits in the Frisco Wild Horse HMA – a clear conflict of interest. She is reported to support horse slaughter and to advocate for eating horses. According to wild horse advocates she sued the BLM to have them gut the precious Sulphur HMA herd of Spanish Colonial Mustang heritage. A major helicopter roundup took place shortly after I was here doing my evaluation in June, 2020. This wild horse gather lasted from August 15 to 31, 2020 and 620 were gathered, with only 46 reproductively suppressed were returned to the HMA. There were eight deaths. Her appointment by the outgoing administration is a hostile “parting shot” toward the wild horses and burros as well as their millions of supporters. (See: <https://www.gisentinel.com/opinion/bernhardts-parting-shot-to-wild-horses/>) In America, at least 80% of the public support much fairer wild horse and burro numbers and habitat allocations. And millions worldwide are keen supporters and love to visit them.

A reappointed member to this board is Humboldt County Nevada commissioner James French, who fills the natural resource management position. He egged for the removal and destruction of wild horses throughout Nevada as part of a legal suit by the Nevada Association of Counties. Finally, Dr. Ursula Bechert was appointed to represent research on this nine-member board. As cofounder of *SpayVac for Wildlife*, she pushes PZP in various forms, including those that cause permanent sterilization in mares. Her bent on research is to have greatly controlled and manipulated herds that would be domesticated. This would be very contrary to the true spirit and intent of the WFHBA (see Downer, 2016 b).

Additional board members have similar contrary aims and values that attack the wild naturally living horses and burros and seek to minimize or wherever possible eliminate their presence on public lands and to basically domesticate small, mere token, not-viable remnant herds, thus making a mockery of the WFHBA. I consider this board’s attitudes antithetical to the true spirit and intent of the WFHBA. The board focuses on rigid suppression and reduction of the herds, monopolization of their legal habitats by public lands’ exploiters – whom they strongly represent – and harmful manipulation of the wild horses and burros themselves.

### **CALL FOR RESTORATION OF THE WILD HORSES AND BURROS AND THEIR HABITATS AND THE TRUE INTENT OF THE WILD FREE-ROAMING HORSES AND BURROS ACT AT ITS 50<sup>TH</sup> ANNIVERSARY**

Now at year 2021 -- the 50<sup>th</sup> Anniversary of the WFHBA, we should be celebrating not lamenting this great act. As a lifelong wild horse observer and defender, I call for the restoration of the Sulphur and Conger mustang herds and all herds throughout the West. As many others, the Sulphur as well as the Conger mustangs deserve restoring at a much higher levels commensurate with their niche space. Concomitantly, there should be a serious reduction in livestock and other resource monopolizing and damaging activities. The WFHBA was passed to keep ranchers from eliminating America’s wild horses and burros, but it is up to our government to defend them from their enemies. Our public officials and servants must act honorably and not cave in to the unreasonable demands of people who are maniacally selfish and greedy! **[PHOTO OF WILD HORSE ANNIE]**

These officials need to seriously consider my Reserve Design proposal (see Downer, 2014 b & <https://www.gofundme.com/mstngreservedesign>) . Reserve Design involves letting the horses and all the natural life community show us how many belong and what true and amazing harmony can be restored. This is the right way forth in today's world, whose life community, including us humans, desperately needs the naturally living horses. Their restoration upon their BLM and US Forest Service lands – the resumption of their age-old, naturally free lifestyle will restore health and harmony in many places not only in America but around the world (see Naundrup and Svenning, 2015). We humans must not perversely persist in displacing, torturing and, as frequently happens, killing them!

At the 50<sup>th</sup> Anniversary of the WFHBA, all upstanding American citizens should heed the WFHBA when it declares: “wild horses and burros are living symbols of the historic and pioneer spirit of the West” and that “they contribute [positively] to the diversity of life forms within the nation and enrich the lives of the American people” and that they “shall be protected from capture, branding, harassment or death” and that “they are to be considered in the area presently found [1971 as year round habitat] as an integral part of the natural system of public lands.” (See Downer, 2014 a, Introduction.)

#### **ADDITIONAL OBSERVATIONS:**

##### **Great Basin National Park, Nevada [PHOTOS OF GBNP, MT WHEELER, ROCK GLACIER, BRISTLECONES, MOUNTAIN MAHOGANY, OTHER NOTABLE]**

Monday, 6/15/2020. Arriving at dusk, I camped last night at Baker Creek Campground in Great Basin National Park (GBNP), Nevada's only N.P, in about the only remaining campsite. I found a pleasant place higher up surrounded by prodigiously sized, Curl-Leaf Mountain Mahogany (*Cercocarpus ledifolius*). Tall Single-Leaf Pinyon Pines and large Big Sagebrush as well as Serviceberry bushes lent a welcoming charm to this campsite. It was great to be in the awesome Snake Range with its rich biodiversity of plant and animal species, many of which are related evolutionarily to the flora and fauna of the Rockies. The famous Lehman Caves occur here and were just a few miles from my campsite. These are important nesting sites for a variety of bats and contain beautiful stalactite and stalagmite formations. However, the caves were closed, and wisely so, to prevent the spread of the, often deadly, Covid-19 virus. I recommend the scholarly, expertly written and beautifully illustrated book by Trimble (1999) to get a greater overview as well as amazing details concerning the Snake Range and many of its species and biomes as well as the entire Great Basin. (GPS at my campsite was 38.98709 deg. N; 114.23641 deg. W; Elev. 7,517' a.s.l. EPE 19').

Continuing on with my morning, I did the Wheeler Peak Scenic Drive, which offered spectacular views, including over the Utah desert valleys and mountains I had just visited. Snow-capped Wheeler Peak itself is 13,063' (3,982 m) a.s.l. and looms like a giant presiding god over the whole region. It retains an icy white snowbank and even a glacier, which feed creeks, streams and rivers that flow both to the east into Utah and to the west into Nevada. By intercepting moisture and wringing out rain and snow, the Snake Range secures the lifeblood for many surrounding communities. Other presiding “gods” in the Snake Range are the 12,050' Mt. Moriah to the north in Humboldt National Forest's Mt. Moriah Wilderness north of U.S. Hwy. 50; S. of 50, the 11, 582' Bald Mtn. (north of Wheeler); the 12,298' Baker Peak (just south of Wheeler); 11,921' Pyramid Peak; 11,876' Mt. Washington and 11,597' Lincoln Peak. Many visitors to GBNP come to hike at least part way up these giants. A consider number reach the crowns and are themselves crowned with spectacular vistas.

I encountered many natural marvels and had some delightful experiences in GBNP. I took copious notes and many photos, including of the several-thousand-year-old Bristlecone Pines, which seemed like hoary prophets full of wisdom and ancient insights. While hiking the Pole Canyon on 6/16/2020, I had a rare encounter with a Peregrine Falcon (*Falco peregrinus*). He uttered a shrill cry from atop a tall White Fir then flew dramatically to the top of a massive cliff that rose vertically over 200 hundred feet **[PHOTO OF PEREGRINE FALCON & CLIFF]**. I was also treated to some tantalizing observations of the Red-Naped Sapsucker (*Sphyrapicus nuchalus*) pecking noisily away at some Aspen trunks and the Least Chipmunk (*Eutamias minimus*), energetically about his daily rounds yet with his keen shiny eyes ever on me.

The lakes here as well as the Rock Glacier and all the different flowering plants, peaceful groves, birds, mammals and insects were rich in variety and exuded an air of peace and harmony. I found this quite soothing and healing, in contrast to the cattle- and OHV-trampled areas where the wild horses were being cheated of their rightful survival resources and persecuted in their own legal habitats (the Sulphur and Conger HMAs).

### **Visit to Eastern Nevada Landscape Coalition Exhibit**

It is important I describe the exhibition of the Eastern Nevada Landscape Coalition that I visited early on the morning of June 17<sup>th</sup> at a location just east from the GBNP and Baker. This 501-c non-profit is based in Ely, Nevada and gives the rancher's side of conservation. I took some notes from its carefully selected mix of scientific facts and their skewed interpretations. These were geared to justify the status quo of rancher monopolization of resources over the vast majority of public lands. One statement targeted Pinyon Pine and Juniper trees as well as Sagebrush as being somehow "degrading [to] wildlife habitat" and causing "soil erosion" and strongly recommended "mechanical removal of woody vegetation" to allow "herbaceous vegetation to return to the landscape ... fostering a balanced, healthy ecosystem more resilient to fire and disease". The exhibit's photos showed an area where the sagebrush community had been mowed down to be replaced by grassy, pasture-like conditions said to restore biodiversity. – In fact, I visited such sites where both Sagebrush and Pinyon-Juniper communities had been cleared away and where, as a consequence, the soils had burned brick-hard and hardly a mustard plant or tumbleweed could grow (see Photos Transect 2). Overlooked by this exhibit was the intrinsic value of Sagebrush and Pinyon-Juniper complexes that adapt to the dry and extreme conditions prevalent in the Great Basin. These communities provide homes for a great variety of plants and animals that are well adapted to prevailing conditions and are much better able to cope with the increasing Global Warming/Heating/Climate Change that is currently accelerating in its intensity.

I recommend we learn to live with these natural communities and not continue the severe degradation of ecosystems by forcing the Great Basin Desert to become cattle and sheep pastures – roles for which they are grossly unsuited! Vast stretches where sagebrush elimination has occurred are dry and lifeless, since they lack the cover of these bushes. This cover helps substory plants, including nutritious grasses and forbs vital for the survival of diverse herbivores and those who feed on them. I recommend that we learn from the Native Americans Paiute, Goshute, Shoshone, Washoe, Bannock and other tribes, particularly as concerns their pre-White lifestyles. This would inform us concerning how people could restore harmony with nature in the wonder-filled Great Basin. For example, we could harvest the nutritious staple Pinyon Pine nuts and Juniper berries in a moderate way that would leave plenty for all the other species that depend on them. This would provide much more sustenance without degrading the ecosystem. And there exist a number of other examples that could spur this much-needed transformation that is so urgently needed today (see Wheat, 1967.)

### **Observations at Little Valley Well [PHOTOS OF DEGRADED SOILS, GULLIES, CATTLE WATER TANK]**

On 6/17/2020 at 4:39 PM MDT, the temperature was 71 deg. F and I thought I would do another Transect (Conger #5) at the Little Valley Well. However, this area of cattle congregation was all in the Extreme to Total category for Soils, Hydrologic and Biotic attributes and seemed to offer little that was novel. Only a few hardy pioneer plants such as Halogeton (*Halogeton glomeratus*), Four-Winged Saltbush (*Atriplex canescens*), and Small Sagebrush (*Artemisia cana*) were present. A few Desert Cottontail were present. Much of the soil had been pounded into power by cattle and vehicles. The site was sad, depressing and typical of many places throughout the West and the world. They show any thinking human what humanity's insistence upon foisting unnaturally high numbers of livestock onto all kinds of ecosystems in order to strip the vegetation and harvest the animals has and continues to cause. It is not the cattle or sheep's fault, since they are not allowed to naturally adapt to the ecosystems into which they are placed. And this they would do if so allowed – or perish! This is Nature's way. How much stark truth there was here at "Conger #5", whose tall, round tank contained most of the waters from Conger Spring. Conger #5 belied the message Eastern Nevada Landscape Coalition's exhibition was trying to impose.

5:04 PM MDT / 4:04 PM PDT. Reach Utah-Nevada Border. Take a rest. Rather warm. Dazzling sun. Then travel on west toward Ely. Spotting for wild horses on way.

### **Observations Coming Back Home Across Nevada**

6:52 PM PDT. Arrive at Ely, Nevada, White Pine county seat. Gas up and eat meal. Speak to undisclosed wild horse advocate who tells me of terrible ongoing injustice toward wild horses in the Ely BLM District here. This includes fencing them out of their rightful watering sources to justify their clearance in the Antelope Valley and Antelope HMAs near Boone Springs. Yet the big sheep rancher here is increasing his sheep to a ridiculous and damaging level. This same permittee (Vogel) appears to be urging BLM to greatly reduce P-J woodland and Sagebrush habitats that are vital cover and shield the soil from harsh solar rays and the terrific drying winds that are typical of the Great Basin. Several other BLM as well as USFS grazing permittee ranchers here, both of cattle and sheep, are going un-counteracted in their efforts to minimize the legal wild horse presence. This advocate believes their goal is total elimination and also informs me that BLM is failing to curb these ranchers' large numbers of out-of-season, trespass cattle and sheep, which are further degrading the public lands' ecosystems. ... I leave Ely just as the sun sets over the craggy, mountain to the west, feeling a cold chill from this place, even though it is mid-June.

At 7:34 PM PDT, I encounter many cattle on US Highway 50 a number of miles west of Ely (see Photos). They have busted through the right-of-way fence and the rancher has erected a flimsy, crude sign urging people to slow down and proceed with caution. Very serious gully erosion by the side of the highway to the south indicates serious overgrazing by livestock. I encounter a lone buckskin wild stallion within the right-of-way fence and am able to take a few photos of him **[PHOTO OF BUCKSKIN STALLION]**. He is very nervous, eyeing me carefully, and runs off when I point my camera at him. He seems very afraid, which indicates very possible harassment by locals or passers-by. GPS here with 8 satellites is: 39.35203 deg. N; 115.37029 deg. W; Elev. 6,699' a.s.l. This is near the Illipah Reservoir Recreation Area.

Disgusted, I proceed on west toward the rustic town of Eureka, crossing the 6,521' Pancake Summit. In the darkness, my headlights illuminate ca. 30 wild horses out on a large open valley fairly near Eureka on

the south side of Highway 50. Many are light grayish or brownish dun, indicating possible Spanish Mustang heritage. But I am too tired to stop and make observations, plus the rattlers come out at night and the visibility is poorer for a human, though the horses possess extraordinary night vision (see Williams, 2015). Nonetheless, I am very glad they are still here, however unfairly diminished in numbers. Playing Gustav Mahler's *Resurrection Symphony #2* on my stereo helped greatly to look beyond to a better world of the future – so Big Thanks, Gustav, for accompanying me along with the wild horses on “America's Loneliest Highway”.

Arriving just after 9 PM at Hickison Summit, I was simply too tired to proceed any further, so I found one of the last remaining camping spots in the Hickison Petroglyph Recreation Area under a beautifully tall Pinyon Pine whose branches still permitted me to view the starry heavens overhead. Quite tired I fell immediately into a profound sleep during which I had two powerful dreams, which seemed related to my efforts to help the wild horses. The second one just before awakening had me both listening to and learning to sing a beautiful operatic song about the virtue of true love in which the Greek word *Agape* was wonderfully stressed. *Agape*, according to my trusty old *Reader's Digest Great Encyclopedic Dictionary*, has this meaning (along with two others): “The kindness and charitableness man should show toward others” -- and here I would most definitely include the wild horses as worthy “others”. It was a most uplifting and soul-stirring dream that seemed to tie in many threads of my life's experience, including the years I spent in the Andes of South America and the beautiful people and places I knew there. And another remarkable aspect was that the opera in my dream was sung in Italian, and though I have not studied Italian (though I am fluent in Spanish and know much French) its meaning was perfectly comprehended.

6/18/2020, 8:00 AM, PDT. Having enjoyed a profound and rejuvenating sleep, including the wonderful dream, I got up around 8 and made myself a hearty vegetarian breakfast. It was a bright summer morning with hardly a cloud in the sky, so I hiked the trails around this scenic site to admire its ancient petroglyphs as well as scenic views. I had been coming here for years and was well acquainted with the bands of wild horses and also the wild burros that had lived here for generations. Consequently, I was very upset not to observe either horses or burros this time and wondered whether the BLM and Toiyabe National Forest in cahoots with local ranchers had gotten rid of them. Indeed, several years ago, the local rancher had shot a number of the wild burros here. And though he even confessed to doing this, he was let off by the judge with a mere “slap on the wrist.” This was an intolerable miscarriage of justice for a flagrant crime! The Hickison Summit Territory is a legal area for these wild horses and burros in the Toiyabe National Forest and adjoining BLM lands, but it appears the public interest has been sacrificed here to favor the wild horses and burros' worst enemies because of a lack of integrity in our public officials. BLM lists an AML of zero for wild horses and of only 16 low to 45 high for wild burros in the Hickison Summit Territory, which it notes is managed by the Toiyabe National Forest and contains 57,275 acres of BLM land in addition to the USFS acres. Since this is a frequently visited site and most people thrill to catch sight of the wild burros, as well as the wild horses that used to live here, it is very disrespectful how these national heritage species are being treated here as well as the General Public who appreciate them. **[PHOTOS OF HICKISON SITE, PETROGLYPHS, WILD BURROS & HORSES FROM EARLIER PANORAMAS, MORMON CRICKETS]**

The GPS where I camped and which I took at 10:20 AM PDT was 39.45005 deg. N; 116.75016 deg. W; Elev. 6,699' a.s.l., EPE 29'. “Hickison Petroglyph Recreation Area Interpretation Site is the correct name of this place. By the way, there was a tremendous outbreak of the Mormon Crickets (*Anabrus simplex*)

going on here as well as for many miles further to the west as I drove back during the day, scouting for wild horses. There were literally millions of them; it is part of their age-old natural life cycle to periodically erupt in this way. In the process, they provide a surfeit of pray for many birds, mammals, reptiles, amphibians and even fellow invertebrates. They also munch down on a considerable amount of vegetation before dying back – which, of course, has the ranchers all up in arms! I observe a poetic justice here, for the enormous numbers of cattle and sheep that they foist upon the Western lands is actually much more seriously devastating and on a much broader scale than what these ancient insect presences do.

Mid-morning, stopping at the Mount Airy Summit just west of Austin and the Reese River Valley, near the Mount Airy Wild Horse HA, I searched the mountain and the spring to the north of US Hwy. 50 with my binoculars. Over the years I had grown very familiar with these horses and their scenic habitat. It is a perfect place for them and for many travelers on Hwy. 50 to appreciate and take photos of them in their natural element. But for me this time I was in for a rude awakening: though I searched and searched I could not spot a single wild horse! Before I had always seen colorful paints and pintos amid a variety of colored horses. What had happened to them? I saw sign of a lot of cattle including especially around the spring but no horses! Were the wild horse enemies here getting their way totally? This lent another ominous note concerning these wonderful animals, who have the legal right to live here! My foreboding was confirmed when I saw on the www that BLM had decided to “zero out” this splendid and historically rooted herd, i. e. not to manage for any wild horses at all in this 67,575-acre legal Herd Area. Obviously, the selfish interests were prevailing here, which “made my blood boil” as the saying goes. **[PHOTOS OF MT AIRY COLORFUL WILD HORSES FROM EARLIER TIMES]**

A ways further west on US 50, I came to the Desatoya Wild Horse HMA further. Here I stopped to search for wild horses using my binoculars. But, none of the beautiful Spanish-type mustangs that I was accustomed to seeing going back decades were present at least within my expert scanning range. **[PHOTOS OF DESATOYA SPANISH MUSTANGS TAKEN EARLIER]** I thought of their powerful arched necks, thick manes, short backs and lively demeanor and became quite worried, especially with news “along the grapevine” of increased illegal roundups and even killings both in Nevada and throughout the West. The Desatoya HMA contains 161,678 legal acres but has been assigned an AML of only 127 low to 180 high for a mean of 154 wild horses. So, at the mean there would be 1,050 acres, or 1.64 square miles, per individual wild horse – Anything over this is arbitrarily labeled as “overpopulated” by BLM and ranchers. All I can say is: how very out of tune and out of touch with the naturally living horses true place, niche and role here is this selfish judgement! ... There is so much glorification of the West in the movies and amid popular culture, yet without the truly wild and naturally living horses, the magnificent mustangs and the wide-open, unfenced spaces wherein they can truly live free, what is the West becoming but an empty farce of a place overpopulated by greedy selfish people who are despoiling it for the short-term plunder of its natural resources!

Finally, at 12:07 PM PDT, at the southern tip of the long Clan Alpine Wild Horse HMA, I spotted a group of ten wild horses grazing at the foot of the mountain in some grassy areas interspersed with Big Sagebrush and Rabbitbrush. **[PHOTOS OF CLAN ALPINE WHS THIS TRIP]** There were no foals or young-of-the-year, which made me think that the mares here were being PZP’ed or GonaCon’ed to prevent conception – a disrespectful practice that undermines their individual fitness, immune system, ability to survive in the long-term – and is against the true spirit and intent of the WFHBA! Among these horses I spied a stunning, well-muscled Pinto, a Sorrel, a Dark Brown as well as a resplendent large White horse.

All were peacefully grazing near the base of the southern Clan Alpine escarpment. Their colors can help them identify one another and so cohere as a band as well as act to camouflage them to prevent detection from their enemies, especially human in these parts. Also, color can make them attractive to potential mates and serve in both heat absorption and dissipation during the various extreme temperatures they must endure to survive. (To better understand the function of the vast and varied colors in horses I recommend the scholarly scientific work by Sponenberg and Beaver (1983). The horses here were all in good condition with Henneke Scores around 5, as best I could estimate. The GPS here was 39.44647 deg. N; 117.83263 deg. W; Elev. 5,425' a.s.l. EPE 26'. The Clan Alpine HMA needs to be independently censused, because it has the largest AML assignments of any in Nevada at 612 low to 979 high for a mean of 796 horses within 302,226 legal HMA acres. So, at the mean there would be 389 acres, or six-tenths (0.6) of a square mile per individual wild horse. I leave it to the reader to ponder the significance of this especially in light of the much greater numbers of livestock and their corresponding AUMs of forage permits when compared with those of the wild horses for whom the HMA is supposed to be principally devoted.

At 12:33 PM PDT, I reached Middle Gate, historic station along US Hwy. 50. The Mormon Crickets continued with their eruption still and extended even as far as the Dixie Valley Turnoff to the north just to the west of the Clan Alpine Range. Nature has some amazing phenomena, and the locust swarms are surely among the most astounding. I think the best attitude to have toward them is to be respectful and seek to realize the higher reason for them within the great overarching scheme. Today, How to live in harmony with Nature, a.k.a. the Great Rest of Life must be uppermost on our minds if the precious life community on planet Earth is to survive.

After reaching the large agricultural town of Fallon, where the Fallon Naval Base is also located, I took a detour through Reno to shop then struck south to reach my home near Minden at 4:26 pm. I was grateful to find my humble but charming home safe and sound and seeming to welcome me back.

6/19/2020. 10:50 AM. I both called and emailed Utah State Office BLM Officials (801-539-4001) to complain about the sealed-off Conger Spring and was told this was under the jurisdiction of the Fillmore Field Office (435-743-3100). The email I was told to send a message to is: [blm-ut-so-public-room@blm.gov](mailto:blm-ut-so-public-room@blm.gov). Finally talking to an official, I was promised that an investigation would be made. Later, the official replied saying they had sent a man out to investigate and that the spring had actually been sealed off for a number of years and that the wild horses and other wildlife had a permanent watering source in the form of a pond that lay a short distance downslope from the Conger Spring. Unconvinced, I remained dissatisfied and unconvinced that what had happened to the Conger Spring and associated habitat was right and fair; I will continue to protest this outrage!

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## **APPENDIX A: SULPHUR WILD HORSE HMA, UTAHI**

### **ECOLOGICAL TRANSECTS and OBSERVATIONS OF WILD HORSES and THEIR HABITAT, SULPHUR HMA**

**TRANSECT #1.** Location: NE side of Needles Mountain Range. GPS: 38.44761 deg. N; 113.82462 deg W; Elev. 5,156' a.s.l.; EPE: 26'. Evaluation Transect Size: 100' x 20'. Site description: desert valley with sagebrush. Observers: Craig Downer and Stephanie Camfield. Date and Time: June 11, 2020, 4:17 PM, Mountain Daylight Time (MDT). Soil: Arid desert loam with degraded granite (DG) of moderate depth. Slope of transect: 3%, East up to West. Recent weather: Drier than normal bordering on drought. Utilization: Heavy livestock with many cattle present. Species in evidence: Animals: Elk, Mule Deer, Wild Horses, Black-tailed Jackrabbit, Coyotes, desert rodents and lizards. Plants: Cheat Grass, Indian Rice Grass, Bluegrass, *Ephedra viridis*, Globe Mallow, Dwarf Sagebrush, Green Rabbitbrush. Offsite influence: Vehicles, *Pots-Sum-Pah* road nearby; cattle and their tenders, predator control, climate change. Criteria used for selecting as representative: Mid-elevation valley, ca. 2 to 3 miles east of Needles Range, used by wild horses, but cattle predominate – typical of large portion of the HMA here. Other Important Observations: Band of 5 wild horses observed several miles off, higher up on Needles Mountain to west. These include one red dun filly, one dark foal, one dark adult stallion and two grulla adult mares. All were grazing. Stallion and lead mare noticed us as we approached, raising their heads and looking intently in our direction. Departure from Expected of 17 indicators with evaluation code (see sample sheet presented above. If not differentiated for S, H and B, applies for all Attributes applicable to Indicator #): 1. N-S; 2. S-M; 3. M; 4. 45% Bare Ground (BG), S-M; 5. N-S; 6. N-S; 7. S-M; 8. S-M for S and H, M for B; 9. S-M; 10. S-M; 11. M; 12. M; 13. M; 14. S-M; 15. S-M; 16. M; 17. S-M.

**Overall Attribute Rating: Soil and Site Stability (S with 10 indicators): S-M (slight to moderate); Hydrologic Function (H with 10 indicators); S-M (Slight to Moderate); Biotic Integrity (B with 9 indicators): M (Moderate). [PHOTO DOING TRANSECT W STEPHANIE]**

**TRANSECT #2.** Location: Sulphur HMA, Utah. GPS: 38.49431 deg. N; 113.79154 deg. W; Elev.: 5,642' a.s.l. EPE: 26'. Site Description: Intensive cattle managed area a few miles east of Needles Range. Observers: C. Downer and S. Camfield. Date and Time: 6/12/2020, 10:36 AM MDT. Soil: Powdery, trampled by cattle, much is pulverized. Moderate depth. Erosion from mountain including a variety of rock types including D.G. Eval. Trans. Size: 100' x 20'. Slope of Transect: 2% W down to E. Parts 0% -- flat. Utilization: Intensive livestock management, spray reseeded. Plants: Bluegrass, Curly Leaf Needlegrass, Indian Rice Grass. Cheat grass also present. Globe Mallow and Spiny Horse-brush (*Tetradymia spinosa*), young Sagebrush. Animals: A few healthy lizards present, including Northern Desert Horned Lizard (*Phrynosoma platyrhinos*), Ground Squirrel, Raven flying to west, dark beetle spreading horse manure. Some wild horse tracks and droppings. Offsite influences: *Pots-Sum-Pah* Road, vehicles, cattle and predator control. Criteria for selection, why representative: Slightly higher than Tr. 1, in area of consideration. Dominant cattle usage of habitat yet area is well within the Sulphur HMA. Other important observations: Excessively grazed, especially by cattle, resulting in wind erosion of topsoils.

Freckled Milkvetch (*Astragalus lentiginosus*) present and is among the most variable of western plants. Observations: Numerous cattle on or beside Utah Highway 21 en route getting here. At least 20 dead cattle by highway including cows with calves as well as bulls, all struck by vehicles, some bloated (see photos and earlier Introduction).

Departure from Expected: 1. N-S, land is flat; 2. M; 3. S-M; 4. 35% BG, S-M; 5. N-S; 6. M-E; 7. M-E; 8. M-E; 9. M-E; 10. M-E; 11. M-E; 12. M-E; 13. S-M; 14. M-E; 15. M-E; 16. M; 17. M-E.

**Overall Attribute Ratings: S: M-E; H: M-E; B: M-E. [PHOTO TR. W VEGETATION, SOIL, LANDSCAPE]**

**TRANSECT #3:** Location: Sulphur HMA, Utah. 400' west of wet-weather streambed. GPS: 38.47291 deg. N; 113.79083 deg. W; Elev. 5,693' a.s.l. EPE: 22'. Ev. Trans. Size: 100' x 20'. Slope S facing 3% to 25%, ESE down to WSW. Site Description: Wet weather streambed. Observers: Downer and Camfield. Date and Time: 6/12/2020, 11:38 AM MDT. Soil: rocky, gravelly, very shallow, some silt. Gully erosion with considerable bedrock parent material. Utilization: Intense cattle use impacting soils, overgrazing vegetation. Species present. Plant: Spiny Horse-brush, Cheatgrass, Curl-leaf Needlegrass and Straight-leaf Needlegrass, Curly Gama grass, native Wheatgrass, Indian Rice Grass, Green Rabbitbrush, Bluegrass, *Ephedra viridis*, Threat-Stalk Locoweed (*Astragalus filipes*). Many plants are dying off above surface. Animals: Large-Spotted Leopard Lizard (*Gambelia wislizenii*) **[PHOTO LEOPARD LIZARD]**, Cottling Moth. Why chosen: Typical example of cattle impacted watering area. Near *Pots-Sum-Pah* Road to west. Departure from Expected: 1. M-E; 2. M-E; 3. M-E; 4. 65% BG, E-T; 5. M-E; 6. M-E; 7. E-T; 8. E-T; 9. E-T; 10. M-E; 11. E-T; 12. M-E; 13. M-E; 14. E-T; 15. E-T; 16. M-E; 17. E-T.

**Overall Attribute Ratings: S: E-T; H: E-T; B: E-T.**

**TRANSECT #4:** Location: Sulphur HMA, Utah. GPS: 38.47170 deg. N; 113.79031 deg. W; Elev.: 5,690' a.s.l. EPE: 22'. Eval. Trans. Size; 100' x 20'. Slope: 12% to 35%. N-facing upward slope. Site Description: 50' from *Pots-Sum-Pah* road. Date and Time: 6/12/2020, 12:30 PM MDT. Evaluators: Downer and Camfield. Soil: Rocky, gravelly, DG. Utilization: Major livestock, moderate wild horses, elk, deer, rabbit. Offsite influences: road, vehicles, cattle. Species Present. Biodiversity Rating, 3 out of 10 (Camfield). Plants: Green Ephedra, Needle and Threat grass (*Stipa comata*); Common Rabbitbrush; Great Basin Wheatgrass, Curl-Leaf Stipa, Straight-Leaf Stipa, Indian Rice Grass (*Oryzopsis hymenoides*), Winterfat (*Ceratoides lanata*) aka *Lamb's Tail*; Spiny Saltbush (*Atriplex confertifolia*) (the other closely related species *Atriplex canescens* (Shadscale) appears here in very salty, evaporation-prone, flat bottomlands; Buckwheat (*Eriogonum* sp.); Bluebell, Moss, lichen, vetch, Prickly Pear Cactus, Spiny Horse-brush, Blue gama (*Bouteloua* sp.). Animals: Lizards, Cottontail rabbits, Black-Tailed Jackrabbit, various songbirds, including sparrows.

Departure from Expected: 1. N-S; 2. S-M; 3. N-S; 4. 30% BG, S-M; 5. N-S; 6. S-M; 7. S-M; 8. S-M; 9. S-M; 10. S-M; 11. S-M; 12. S-M; 13. S-M; 14. S-M; 15. S-M; 16. S-M; 17. S-M.

**Overall Attribute Rating: S: S-M; H: S-M; B: S-M. [PHOTO TR.]**

**TRANSECT #5:** Location: Sulphur HMA, Utah. West side of broad valley. GPS: 38.45105 Deg. N; 113.81959 deg. W. Elev. 6,056' a.s.l. EPE: 22'. Date and Time: 6/12/2020, 1:27 PM, MDT. Observers: Downer and Camfield. Eval. Trans. Size: 100' x 20'. Fairly level. Site Description: Along fence line running SSE to NNW on west edge of fence maintenance road, off *Pots-Sum-Pah* Road. Soil: Fine grain sand and desert loam, moderate depth. Very slight surface effervescence. Utilization: Heavy livestock, some wild horse sign. Offsite influences: primarily livestock, fence maintenance road (fence is partially fallen down), nearby major road with ditch deeply graded on side. Criteria for selection: Representative of habitat along fence and road (of which many in HMA). Species: Plants. Orange Globe Mallow

(*Sphaeralcea munroana*) growing in mechanically disturbed areas. Winterfat, Dwarf/Small Sagebrush, Green Ephedra, Curl leaf Needlegrass, Cheatgrass, Green Rabbitbrush. Animals: Hawk circling overhead, desert sparrows.

Departure from Expected: 1. N-S; 2. M; 3. N-S; 4. 67% BG, M-E; 5. N-S; 6. M-E; 7. M-E; 8. M-E; 9. M-E; 10. M-E; 11. M-E; 12. M-E; 13. S-M; 14. M-E; 15. M-E; 16. S-M; 17. M-E.

**Overall Attribute Ratings: S: M-E; H: M-E; B: M-E. [PHOTO TR.]**

**TRANSECT #6:** Location: Sulphur HMA, Utah. West side of valley, east of Needles Range and quarter mile west of *Pots-Sum-Pah* Road. GPS: 38.43996 Deg. N; 113.83374 deg. W; Elev.: 6,148' a.s.l. EPE: 19'. Date and Time: 6/12/2020, 2:21 PM MDT. Ev. Tr. Size: 100' x 20'. Slope 5% NE up to SW. Site Description: Soil: Rocky, mixed loam, of moderate depth. Utilization: primarily cattle, also present wild horses, mule deer, cottontail. Remains of small Ground Squirrel pelvis still with tallow, possibly recent raptor kill. Plants: Green Ephedra, Dwarf Sagebrush. Both browsed. Utah Juniper. Green Rabbitbrush. Cheatgrass. Horsebrush. Offsite influences: Cattle and tenders, ORVs, Hunters. Criteria for selecting this area: Represents important shelter/cover area for wild horses, mule deer and other wildlife, including birds. Additional observations: Old-growth Utah Juniper with thick trunk, ca. 3' D.B.H. with a broad "roof" formed by spreading branches. Seedlings of Juniper sprouting up – nice nursery here. Songbirds nesting in trees here include Dark-Eyed Junco (*Junco hyemalis*). **[PHOTO DARK-EYED JUNCO]** This appears to be the Gray-Headed Junco subspecies (*J. h. caniceps*). Stephanie Camfield says that juniper berries are a reminder to live in harmony with all of life, according to Native American tradition. She is Native American. There are some Prickly Pear Cacti nearby as well as Ant hills/nests and a wild horse dung depot well integrating into the soils. Obviously, this is an important resting area for them.

Departure from Expected: 1. N-S; 2. S-M; 3. N-S; 4. 61% BG, M; 5. N-S; 6. M-E; 7. M-E; 8. S-M; 9. S-M; 10. M; 11. S-M; 12. M; 13. N-S; 14. S-M; 15. M; 16. S-M; 17. S-M.

**Overall Attribute Ratings: S: S-M; H: S-M; B: S-M. [PHOTO TR.]**

**TRANSECT #7:** Location: Sulphur HMA Utah. Higher up into mountain, eastern slope. GPS: 38.43442 deg. N; 113.84445 deg. W; Elev: 6,350' a.s.l. Date and Time: 6/12/2020, 4:04 PM, MDT. Obs. Downer and Camfield. Ev. Tr. Size: 100' x 20', 12% slope, E up to W. Soil: finer, of moderate depth, with medium-size rocks and parent material: both basalt and granite, mixed with desert loam with substantial mixture of animal dung. Utilization: Wild Horses, Mule Deer, smaller animals. Plants: Yarrow (*Achillea millefolium*), Western Peony (*Paeonia brownii*) (Native Americans made tea from roots, considered healing for lungs.) **[PHOTO W. PEONY]** Indian Paintbrush. Dwarf Sagebrush. Cholla Cactus. Barrel Cactus. Winterfat prevalent. Some Cheatgrass in disturbed areas. Animals: Ants, Grasshoppers, droppings of Mule Deer, Wild Horses. Offsite influences: vehicles, *Pots-Sum-Pah* Road, 300' to east. Criteria used to select site: Representative of a distinctive dwarf desert ecosystem. Other Observations: Soil Biotic Crust intact due to absence of livestock and ORVs and even though wild horses are present here: their blunt, rounded hooves distribute their weight much more evenly than do the cloven-hooved cattle whose hooves often slice deeply into soils, drying them out. There is no sign of significant wind erosion. There is sign of a deep snowbank here earlier in Spring and Winter.

Departure from Expected: 1. N-S; 2. N-S; 3. N-S; 4. 36% BG, N-S; 5. N-S; 6. N-S; 7. N-S; 8. N-S; 9. N-S; 10. N-S; 11. N-S; 12. N-S; 13. S-M; 14. S-M; 15. N-S; 16. N-S; 17. S-M.

**Overall Attribute Ratings: S: N-S; H: N-S; B: N-S. [PHOTO TRANSECT]**

Conclusion: Transect shows how the wild horses and native wildlife do not degrade the ecosystem, but that it is only when people foist inordinate numbers of livestock, in this case cattle, upon the land, or

otherwise trample it with their vehicles, that such ecosystems seriously degrade. This was a serene and pleasant spot with a sense of peace and commanding a vast view out over the valley and mountains.

**TRANSECT #8:** Location: Sulphur HMA, Utah. Transition between tallis-slope declining eastward and steeper eastern mountain face. GPS: 38.43345 deg. N; 113.84848 deg. W; Elev.: 6,481' a.s.l.; EPE: 19'. Date and Time: 6/12/2020, 4:55 PM, MDT. Obs. Camfield and Downer. Ev. Tr. Size: 100' x 20', 42% slope W down to E. Soil: Healthy desert loam with intact rocky crust. Deep soil. Aspect: East. Utilization: Of forage primarily by Mule Deer, Wild Horses, and other wildlife like Rabbits. Pack Rat (*Neotoma* sp.) nest present. Various Songbirds and Raven flying overhead. Plants present: Paintbrush. Dwarf Sagebrush. Moss. Lichen that is very colorful. Globe Mallow. Dwarfed Cholla-like Cactus. Barrel Cactus. Healthy Single-Leaf Pinyon Pines growing to 25' high [**PHOTO TALL PINYON**] and nearly as broad. Utah Juniper growing 25' to 30' high and 15' to 20' broad. Both providing excellent shelter for many animals, including deer and horse. Bluegrass, Wheatgrass. Wild oats. Green Ephedra. Green Rabbitbrush. Offsite influences: Occasionally human hikers. Road is far away by several 100'. This is not *Pots-Sum-Pah* Road but an offshoot. Criteria used to select: Representative of ecotone between more gradual slope and steeper slope in a transition area. Additional Obs.: Pack rat nest could reveal more thorough plant species present going back decades, even centuries. A glittering, white-veined rock here, probably a form of Chert. Very pretty. Pinyons constitute important animal shelter. Departure from Expected: 1. N-S; 2. N-S; 3. N-S; 4. 42% BG, N-S; 5. N-S; 6. N-S; 7. N-S; 8. N-S; 9. N-S; 10. N-S; 11. N-S; 12. N-S; 13. S-M; 14. N-S; 15. N-S; 16. S-M; 17. N-S.

**Overall Attribute Ratings: S: N-S; H: N-S; B: N-S. [PHOTO TRANSECT]**

Conclusion: This area had a special energizing effect on us, due to its sense of harmony and the positive relation between/among all the species here. The absence of livestock and vehicles due to the steepness of the terrain and its rockiness certainly had a lot to do with this (see Photos).

**TRANSECT #9:** Location: Sulphur HMA, Utah. Foothills NE of Needles Range. GPS: 38.45348 deg. N; 113.83501 deg. W; Elev.: 6,173' a.s.l. EPE: 19'. Date and Time: 6/13/2020, 7:44 PM, MDT. Obs.: Downer and Camfield. Ev. Tr. Size: 100' x 20', 10% slope W down to E. Soil: fine with rocks, moderate depth. Utilization: Pronghorn, Mule Deer, sign of at least one cow. Other animals obs.: Bobcat, Gray Flycatcher (*Empidonax wrightii*) whose voice goes *Cheh-We*.. Its habitat matches that described in Peterson Western Bird Guide, p. 240: Pinyon and Juniper and Sagebrush, so typical of the Great Basin. Plants: Horse-brush (*Tetradymia* sp.), Green Ephedra (*Ephedra viridis*), Green Rabbitbrush (*Chrysothamnus viscidiflorus*), [**PHOTO GREEN RABBITBRUSH**] Great Basin Wheatgrass, Bluebunch Wheatgrass (*Agropyron spicatum*), the ubiquitous Cheatgrass, aka Red Brome (*Bromus tectorum*), Dwarf Sagebrush (*Artemisia cana*). The Thread-stalk Locoweed is present and considered a threat to livestock and horses because of its toxins. It accumulates large amounts of Selenium that interferes with protein metabolism. Its cata-alkaloid is like "locine" but Stephanie says it can be an immune support for us humans when taken in moderation, of course. Offsite influences: ORVs, human visitors, hikers, nearby road. Criteria for selection: Representative of fairly popular, human visited wild horse site, including a long sloping plateau. This is a very distinctive, energetic habitat. Other observations: Bobcat and possibly Puma tracks in the deep, gravelly broad wash. Pronghorn spoor. Wild Horses observed and photographed. Mule Deer spoor. Empidonax flycatchers very active. Dark Dung beetle. Several wild horse family groups/bands nearby and are very active at this crepuscular, evening hour. We obtain some good observations/photos (see Photos). Heavily browsed Green Ephedra bushes observed, a few of which appear dying. There arise strong evening *adiabatic* winds, so I sleep in my vehicle, though Stephanie,

brave soul, is content to sleep in a hammock strung between two Pinyons. Considerable camper and vehicle disturbances in this draw. A young band of three wild horses ran off as though frightened and fearful of people.

Departure from Expected: 1. N-S; 2. N-S; 3. S-M; 4. 40% BG, S-M; 5. N-S; 6. S-M; 7. S-M; 8. S-M; 9. S-M; 10. N-S; 11. N-S; 12. N-S; 13. S-M; 14. S-M; 15. S-M; 16. S-M; 17. N-S.

**Overall Attribute Ratings: S: S-M; H: N-S; B: S-M. [PHOTO TRANSECT]**

Conclusion: Considerable damage by vehicles and visitors, including campers as well as some cattle is moderately impacting this habitat, which is an important one for many species, including wild horses.

**TRANSECT #10:** Location: Sulphur HMA, Utah. Edge of enclosure of a natural spring with standing water in a large pond. Major water source for many animal species. GPS: 38.4377 deg. N; 113.84385 deg. W; Elev. 6,314' a.s.l. EPE 19'. Date and Time: 6/13/2020, 9:24 AM, MDT. Obs. Camfield and Downer. Env. Tr. Size: 100' x 20', 4% slope NW down to SE. Soil: Nearly 100% grass or forb covered. Deep, organic-rich, moist soil with considerable silt and clay. Utilization: Mixed cattle and wild horses, many wildlife species also water here. Several Cottontail Rabbits seen. Other animals seen: Sparrows in bushes, Raven pair circling high overhead. A wild mare and stallion pair 00 meters away. Offsite influences: *Pots-Sum-Pah* Road. Heavy Cattle impact. Fenced area around center of spring. People frequently visiting, including hunters, leave cast-off shells. Criteria for Selection: Represents typical spring and major watering source, being impacted to a large degree by humans and livestock, but still functioning. Animals: Mule Deer, Rabbits, Wild Horses, Killdeer. Plants: Creeping ground hugging grass: Crabgrass (*Digitaria sanguinalis*). thick clusters of Wild Rose (*Rosa fendleri*) growing to 6' high. **[PHOTO WILD ROSE]** Utah Thistle (*Cirsium utahense*) growing in heavily impacted areas. Green Ephedra. Rushes (*Juncus* sp.). Steppe Bluegrass (*Poa secunda*). Needlegrass (*Stipa* sp.). Rabbitbrush. Brome grass. Possibly Yellow Peppergrass (*Lepidium flavum*) in the Mustard Family is another ground-hugging plant here. It sports delicate yellow flowers. Departure from Expected: 1. N-S; 2. N-S; 3. N-S; 4. 2% BG, N-S; 5. N-S; 6. N-S; 7. S-M; 8. S-M; 9. N-S; 10. M; 11. S-M; 12. S-M; 13. N-S; 14. S-M; 15. S-M; 16. M; 17. M.

**Overall Attribute Ratings: S: N-S; H: N-S; B: S-M. [PHOTO TRANSECT]**

Conclusion: Major impacts present, but would be much worse were it not for the enclosure fence.

**TRANSECT #11:** Location: Sulphur HMA, Utah. Seasonal Stream Bed. GPS: 38.41949 deg. N; 113.84559 Deg. W; Elev. 6,374' a.s.l. EPE: 29'. Date and Time: 6/13/2020, 10:15 AM, MDT. Obs.: Camfield and Downer. Ev. Tr. Size: 100' x 20', 2% slope N down to S. Soil: fine to mid-fine soil, in alluvial wash with much silt. Moderate depth. Utilization: Cattle impact is most heavy one. Some wild horses and mule deer. Offsite influence: All-Terrain-Vehicles (ATV) are using this seasonal streambed as a road and causing much damage, noise pollution, erosion, sloughing of banks, etc. This disturbs and stresses many wildlife including wild horses. Criteria used in choosing: Represents relative healthy seasonal streambed. Other observations: Pronghorn droppings. Ground Squirrel holes, which can be hazardous to wild horses especially when chased during the helicopter roundups or by riders or vehicles. Much discarded, downed barbed wire noticed just to southwest of evaluation site. Plants: several healthy mature Utah Junipers growing to 20' high. Winterfat clumps appear healthy. Horse-brush and Rabbitbrush healthy. Several Pinyon Pines also present and healthy, also growing to 20'. Bud Sagebrush (*Artemisia spinescens*). Some Shadscale (*Atriplex canescens*). A member of the Boraginaceae family, Popcorn Flower (*Plagiobathrys nothofulvus*) produces purple dye used by Native Americans. It is also called "Architecto" in Spanish. Stalks are skeleton-like, low-lying, sage green, delicate and possess spatulate leaves. 5" high. White five-petaled flowers. Tuft of leaves at base. --Fascinating plant! **[PHOTO**

### **POPCORN FLOWER PLANT]**

Departure from Expected: 1. N-S; 2. N-S; 3. S-M; 4. 63% BG, S-M; 5. N-S; 6. N-S; 7. N-S; 8. S-M; 9. S-M; 10. N-S; 11. N-S; 12. N-S; 13. N-S; 14. N-S; 15. N-S; 16. N-S; 17. N-S.

**Overall Attribute Ratings: S: N-S; H: N-S; B: N-S. [PHOTO TRANSECT]**

**TRANSECT #12:** Location: Sulphur HMA, Utah, on gently rounded crown of the Needle Range mountain. There is a spring watering site for wildlife here. GPS: 38.41126 deg. N; 113.86102 deg. W; Elev. 6,512' a.s.l. EPE 26'. Date and Time: 6/13/2020, 11:37 AM, MDT. Obs. Downer and Camfield. Ev. Tr. Size: 100' x 20', 3% slope N down to S. Soil: Silty with much clay. Deep. Utilization: Mostly cattle, some domestic horses (iron-shoe-clad horse prints), some wild horses, deer, frogs and toads and other wildlife. Several different songbirds observed, plus beetles on ground. Plants: Large Utah Junipers [**PHOTO TALL JUNIPER & SAGEBRUSH**], Pinyon Pines, Gambel Oaks (*Quercus gambelii*), Willows (*Salix* sp.). Buttercups in flower. Big Sage to 4' (*Artemisia tridentata wyomingensis*). Watercress and Rushes growing either by or in the water. Gray Rabbitbrush (*Chrysothamnus nauseosum*). Plintain. There is a variety of habitats here for an impressive array of species including a beautiful flowering example of the Showy Calypso Fairy Slipper (*Calypso bulbosa*) in the Orchid family. Offsite influence: Human visitors include hunters, tree cutters, wood gatherers and cow tenders. Vehicles, road nearby is giving access to several destructive inroads. Criteria used to select: This site presents a special, unique and intensive watering area for many species on this rounded crown of the mountain. This area is being heavily impacted by livestock and livestock-tending, vehicles, hunters (shell cartridges, both from shotguns and deer rifles, encountered frequently). There is erosion around the pond bank caused by cattle and somewhat by deer. Several cows were present among the willows some with calves and were heard mooing.

Departure from Expected: 1. N-S; 2. M-E; 3. M-E; 4. 50% BG, M-E; 5. N-S; 6. N-S; 7. M; 8. E-T; 9. M-E; 10. M-E; 11. E-T; 12. M-E; 13. M-E; 14. M; 15. M-E; 16. M-E; 17. M-E.

**Overall Attribute Ratings; s: M-E; H: M-E; B: M-E. [PHOTO TRANSECT]**

Conclusion: While this area shows considerable life, it is being heavily damaged by human-foisted cattle and vehicles. Water is running down the dirt road here causing gully erosion and needs to be diverted. It is a shame to see such an important component of viable wildlife habitat being seriously degraded. More control over livestock and vehicles particularly called for.

**TRANSECT #13:** Location: Sulphur HMA, Utah. Reseeded burned area. Pinyon-Juniper wood gather area. Granite outcropping present. GPS: 38.40128 deg. N; 113.88566 deg. W; Elev. 6,819' a.s.l. EPE 26'. Obs. Camfield and Downer. Date and Time: 6/13/2020, 12:53 PM, MDT. Ev. Tr. Size: 100' x 20' at 3% slope W down to E. Soil: Desert Loam. Moderate depth. Utilization: More by wildlife here than by livestock. Animals: Mule Deer, Cottontail Rabbits, Black-Tailed Jackrabbits, many flying insects, including tiny black flies, bugs and beetles, some limited Wild Horse sign. Plants: both Gray and Green species or Rabbitbrush. Desert/Gray-Ball Sage (*Salvia dorrii*) in the Mint family. [**PHOTO GRAY-BALL SAGE**] This plant had an attractive gray-ball inflorescence with a pleasant smell. This is a sacred plant to Native Americans and used in purification rituals. Also present were Lupines, Needlegrasses (*Stipa* spp.) and Foxtail Barley (*Hordeum jubatum*). Offsite influence: Wood gatherers are having major impact, removing much organic material that would otherwise be recycled into the soils and serve as sustenance for microorganisms, insects and even smaller animals. Vehicles are compacting soils. Also, some livestock and hunters. Criteria for Selection: Represents a recent burn area where wood gatherers are allowed and where their impact is heavy. Other observations: This burn area has been reseeded. There is a continuous strip of trees along the edge between the burn area and the road that is composed mainly of

Pinyons and Junipers. A lot of slash from woodcutting is decomposing naturally, but could be quickly kindled by a lightning strike or other means.

Departure from Expected: 1. N-S; 2. N-S; 3. N-S; 4. 45% BG, S-M; 5. N-S; 6. S-M; 7. S-M; 8. S-M; 9. S-M; 10. N-S; 11. N-S; 12. S-M; 13. S-M; 14. N-S; 15. S-M; 16. N-S; 17. N-S.

**Overall Attribute Ratings: S: S-M; H: N-S; B: S-M. [PHOTO TRANSECT]**

Conclusion: Heavily impacted area but nature could recover if left to its own devices. There needs to be more control on wood gathering and other human activities here.

**TRANSECT #14:** Location: Sulphur HMA, Utah. Continue to crossing over broad crown of the mountain. Pinyon-Juniper woodland. GPS: 38.40279 deg. N; 113.91565 deg. W; Elev. 7,174 ' a.s.l. EPE 22'. Obs. Downer and Camfield. Date and Time: 6/13/2020, 1:42 PM, MDT. Ev. Tr. Size: 100' x 20', 2% slope W up to E. Soil: Fine P-J loam, deep. Utilization: Many Mule Deer, some rabbits and rodents. Offsite influence: Road and human hikers. Criteria for Selection: Natural, well preserved, little disturbed habitat. Animals: Mule Deer, Western Fence Lizard (*Sceloporus occidentalis*) sunning on a rock. Plants: Desert Sage. Pinyon to 30'. Utah Juniper to 35'. Big Wyoming Sagebrush (*Artemisia tridentata wyomingensis*) to 12' high. Fescue grass (*Festuca* sp.). Cheatgrass. Prickly Pear Cactus (*Opuntia polyacantha*) with bright yellow blossom. **[PHOTO CACTUS IN FLOWER]** Desert Four O'Clock/Maravilla (*Mirabilis multiflora*) in open sandy area amid P-J woodland, some of which are drying out and dying. **[PHOTO FOUR O'CLOCK]** Healthy clumps of lichen and moss on granite and fallen trunks; these constitute a vital part of the "living sponge". Other observations: young bark-stripped Pinyon tree shows where perhaps a male Mule Deer or Elk rubbed his antlers. Natural, low relief wash area. (Road crossed over the crown of the mountain at GPS: 38.10142 deg. N; 113.955 deg. W; Elev. 6,816' a.s.l. EPE 26'.)

Departure from Expected: 1. S-M; 2. N-S; 3. N-S; 4. 75% BG, M; 5. N-S; 6. S-M; 7. S-M; 8. S-M; 9. N-S; 10. N-S; 11. N-S; 12. N-S; 13. S-M; 13. S-M; 14. S-M; 15. S-M; 16. N-S; 17. S-M.

**Overall Attribute Ratings: S: N-S; H: N-S; B: N-S. [PHOTO TRANSECT]**

Conclusion: Fairly intact habitat, especially due to absence of livestock.

**TRANSECT #15:** Location: Sulphur HMA, Utah. At Sulphur Springs and seep area. Note: This HMA and its wild horses are often referred to as the Sulphur Springs HMA and the Sulphur Springs Mustangs, known for their high Spanish Colonial genetic purity and high relatedness to the ancient Spanish Sorraias (see Harris, 2009). GPS: 38.39405 deg. N; 113.96223 deg. W; Elev. 6,756' a.s.l. EPE 36'. Temperature: 80 deg. F. Observers: Downer and Camfield. Date and Time: 6/13/2020, 2:57 PM, MDT. Ev. Tr. Size: 100' x 20' at 7% slope, E down to W. Soil: Deep organic meadow soil with much humus. Well-developed soil horizons **[PHOTO SOIL HORIZONS]**. Utilization: Extensive excavation just below the meadow and seep is draining water and threatening the life of this very important meadow, upon which so many species depend, including Mule Deer, Rocky Mountain Elk (*Cervus canadensis*) **[PHOTO ELK & CALF]**, Livestock (many Cattle in evidence), Wild Horses to lesser degree. Offsite influence: Off-road vehicles. Nearby road. Frequent human visitors, including cattle tenders, hunters and campers. Criteria for Selection: Represents important spring, water and mineral source, meadow area for wild horses, deer, elk, rabbits and others. Large female Elk and her calf observed and photographed. Animals: In addition to foregoing, dead Gray Fox carcass, Coyote tracks and scat. Cottontail Rabbits. Plants: Both Green and Gray Rabbitbrush along meadow edges. Rushes. Sedges. Fescue grass. Blue grass. Timothy grass. Buttercups. Wyoming Big Sagebrush above meadow. Showy Penstemon (*Penstemon speciosus*) with ornate purplish-blue flowers growing near the spring source. **[PHOTO SHOWY PENSTEMON]**



Departure from Expected: 1. S-M; 2. S-M; 3. S-M; 4. 20% BG, S-M; 5. S-M; 6. N-S; 7. N-S; 8. N-S; 9. N-S; 10. N-S; 11. S-M; 12. N-S; 13. N-S; 14. N-S; 15. N-S; 16. N-S; 17. N-S.

**Overall Attribute Rating: S: S-M; H: S-M; B: N-S. [PHOTO TRANSECT]**

Conclusion: Fairly healthy spring and associated meadow, but with looming threats from excavation on lower west side that is draining the meadows. Immediate action needed to stabilize the current downward trend of this vital habitat for many species, including the Wild Horses, Rocky Mountain Elk and Mule Deer.

**TRANSECT #16:** Location: Sulphur HMA, Utah. High plateau amid P-J woods. GPS: 38.39727 deg. N; 113.1398 deg. W; Elev. 7,023' a.s.l. EPE 39'. Temperature: 83 deg. F. Observers: Camfield and Downer. Date and Time: 6/13/2020, 4:22 PM MDT. Ev. Tr. Size: 100' x 20', level, aspect SW to NE. Soil: P-J woodland loam with degraded volcanic rock, much DG, moderate depth. Utilization: Livestock: Cattle. Mule Deer. Wild Horses. Habitat being disrupted by cattle and logging of Pinyon and Juniper trees and crushing of other plants. Criteria for Selection: Represents P-J clearance, opening for grass and forbs. Other observations: Much debris left after clearing of trees using chainsaws. Wood gatherers and vehicles causing much damage. Area has been reseeded with a variety of plants and some regeneration by Pinyon and Juniper seedlings is occurring. Animals: Tracks of Wild Horses, Mule Deer and Pack Rats (*Neotoma* sp.). The latter store a great variety of plant species in their nests. Pretty Desert Checkerspot (*Charidryas neumogeni*) observed. **[PHOTO DESERT CHECKERSPOT]** Plants: Prickly Poppy (*Argemone platyceras*) in disturbed soils. Desert Four O'Clock. Big Sagebrush. Green Rabbitbrush. Cheatgrass and other grasses. Unknown daisy like forb, very showy but unable to identify.

Departure from Expected: 1. N-S; 2. M-E; 3. S-M; 4. 70% BG, M-E; 5. N-S; 6. M-E; 7. E-T; 8. M-E; 9. M-E; 10. M-E; 11. M-E; 12. M-E; 13. E-T; 14. E-T; 15. M-E; 16. M; 17. E-T.

**Overall Attribute Rating: S: M-E; H: M-E; B: M-E. [PHOTO TRANSECT]**

Conclusion: P-J woodland clearing coupled with wood gatherers' slash and livestock are having serious damaging effects upon this ecosystem. There needs to be a relaxation from these negative impacts to allow the natural world and all its species to heal and restore.

**TRANSECT #17:** Location: Sulphur HMA, Utah. Base of Indian Peak near spring-fed stream. GPS: 38.32028 deg. N; 113.89422 deg. W; Elev. 7,268' a.s.l. EPE 19'. Temp. 82 deg. F. Observers: Downer and Camfield. Date and Time: 6/13/2020, 6:22 PM MDT. Ev. Tr. Size: 100' x 20', 4% slope S down to N. Soil: Deep, rich, meadowy organic humus covering all but 1% of ground. Utilization: Cattle predominate -- also some Wild Horses, Elk and Mule Deer as well as Cottontail Rabbits. Plants: Thick mat of Sandberg's Bluegrass (*Poa secunda*), also Lupines, Rushes, Seep-Spring Watercress (*Nasturtium officinale*), Monkey Flowers (*Mimulus guttatus*), Wild Roses and thick green Mosses along stream. Big Sagebrush at edge of meadow. Offsite influence: Fencing, near road, human visitors. Criteria for selection: important spring water source. Other remarks: Cattle grazing nearby, some wild horse tracks. Water is clear. **[PHOTO CATTLE, MONKEY FLOWERS]**

Departure from Expected: 1. N-S; 2. N-S; 3. N-S; 4. 1% BG, N-S; 5. N-S; 6. N-S; 7. N-S; 8. N-S; 9. N-S; 10. N-S; 11. S-M; 12. S-M; 13. S-M; 14. N-S; 15. N-S; 16. S-M; 17. S-M.

**Overall Attribute Rating: S: N-S; H: N-S; B: S-M. [PHOTO TRANSECT]**

Conclusion: Meadow and stream are healthy, but may be draining a large peripheral area, thus depriving many species in adjacent habitat. But I am pleased that a variety of wildlife species, not just cattle, are able to avail themselves of this water source and associated verdant meadow.

**TRANSECT #18:** Location: Sulphur HMA, Utah. Edge of P-J woodland clearing. This area is part of the historic range of Spanish Mustangs going back 150 years or more. GPS: 38.36240 deg. N; 113.91060 deg. W. Elev. 7,067' a.s.l. EPE 32'. Temp. 79 deg. F. Observers: Camfield and Downer. Date and Time: 6/13/2020, 7 PM MDT. Ev. Tr. Size: 100' x 20', 1% slope W down to E. Soil: 25% BG. Surface texture powdery. Moderate depth. Desert loam. Utilization: Band of 7 Spanish-like wild horses nearby [**PHOTO BAND OF 7 SPANISH MUSTANGS**]. Spoor of cattle, elk, mule deer prevalent. Horse droppings are clearly enriching soils, complementing ruminants in this regard. Offsite influence: Chaining of P-J woodlands, hunters, predatory control suspect, i.e. no sign of puma and little of coyote. Criteria for Selection: Represents historic range of Spanish Mustangs. Edge of PJ clearing. Evidence of wildfire sweeping through her several years ago. Other Obs.: Raven nearby. Strong winds arising with gusts to 30 mph. Plants: Both Green and Gray Rabbitbrush species. Gambel Scrub Oak (*Quercus gambeli*). Deer/Bitter Brush (*Purshia tridentata*). Fescue grass. Bluegrass. Cheatgrass. Great Basin Wildrye (*Elymus cinereus*). Needlegrass. Wild Oatgrass. Many of these most likely seeded by BLM or rancher or Wildlife Department. Young Junipers springing up as well as an unknown colorful Daisy. (Photos). Departure from Expected: 1. N-S; 2. S-M; 3. N-S; 4. 25% BG, S-M; 5. N-S; 6. M; 7. M; 8. S-M; 9. S-M; 10. S-M; 11. N-S; 12. S-M; 13. M; 14. S-M; 15. S-M; 16. S-M; 17. N-S.

**Overall Attribute Rating: S: S-M; H: S-M; B: S-M. [PHOTO TRANSECT]**

Conclusion: Though major impacts have occurred here, the habitat is bouncing back well. This area was seeded and treated more to favor cattle. More favoring of the magnificent Spanish Mustangs surviving here in their legal area is called for. There should be more promotion of them for ecotourists.

**TRANSECT #19:** Location: Sulphur HMA, Utah. P-J woodland next to road and just to west of a fenced-in area of several square miles, including a major water source. Fence constructed by the rancher here. GPS: 38.37714deg. N; 113.87502 Deg. W. Elev. 6,784' a.s.l. EPE 19'. Temp. 65.3 Deg. F. Observers: Downer (Camfield returned home to New Mexico due to family emergency). Date and Time: 6/14/2020, 7:57 AM, MDT. Ev. Tr. Size: 100' x 20', 3% slope SE up to NW. Soil: Thick humus at base of Juniper. Deep. 80% BG (Bare Ground). DG (Decomposed Granite). Parts very compacted by vehicles of wood cutters, etc. Utilization: Wood gatherers with heavy vehicles impacting soils. Hunters. Offsite influence: Road. Numerous cattle in large, fenced area and also outside. Fences disrupting natural movements of wild horses and other wildlife. Restricted access to water. Well pump reducing aquifer. Criteria for Selection: Representative of area adjacent to a vast rancher enclosure to most wildlife species, primarily to promote cattle production, and possibly certain game animals such as deer and elk. [**PHOTO ENCLOSURE**]. Other remarks: Cows are heavily impacting soils and vegetation inside the large cattle

exclosure. Rocks and downed trees can help provide shelter for some animals, allowing shade for seedlings. Plants: Pinyon, Juniper (both these trees provide vital shelter for animals including Wild Horses). Prickly Pear Cactus. Big Sagebrush to 3 ½ feet high. Green Ephedra. Animals. Wild Horses less common but present. Songbirds and Raptors such as hawks and falcons. Downy Woodpecker (*Picoides pubescens*) [**PHOTO DOWNY WOODPECKER**] heard reducing dead trees to dust in search of grubs, beetles, etc. Pinyon Mice. Raven. Black-Tailed Jackrabbit. Cottontail Rabbit. Several Ant mounds. Departure from Expected: 1. N-S; 2. M; 3. N-S; 4. 80% BG, M-E; 5. N-S; 6. M; 7. M-E; 8. M; 9. M; 10. M; 11. M-E; 12. M; 13. M-E; 14. M-E; 15. M-E; 16. N-S; 17. M.

**Overall Attribute Rating: S: M; H: M; B: M. [PHOTO TRANSECT]**

Conclusion: Here in the heart of the Sulphur HMA, the rancher is being allowed extreme license to exploit the habitat for his advantage and to the detriment of the wild horses and other wildlife. This injustice urgently needs to be addressed.

**TRANSECT #20:** Location: Sulphur HMA, Utah. Just ¼ miles north of a large wildfire burn area along a road on a high plateau amid thick Pinyon – Juniper woodland. More Pinyons than Junipers in the draw. GPS: 38.41635 deg. N; 113.88353 deg. W; Elev. 6,780' a.s.l. EPE 32'. Temp. 82 deg. F. Obs. Downer. Date and Time: 6/14/2020, 10:26 AM, MDT. Ev. Tr. Size: 100' x 20'. Slope E down to W ca. 15%. Soil: Thick P-J woodland mixed Sagebrush loam. 66% BG. Deep soil. DG. Utilization: Wildlife including Mule Deer. Road nearby: two hundred meters up slope to east. Some prospecting for minerals, rocks, noted. Campsites near road. Old jeep trail. Animals: Mule Deer, Songbirds. Doves. Bobcat. Mountain Lion. Attractive Sagebrush Checkerspot (*Charidryas acastus*) butterfly observed. No sign of cattle. Pinyon Mouse (*Peromyscus truei*) observed. [**PHOTO OF PINYON MOUSE**] This mouse caches pinyon nuts in many places, which helps the Pinyon reproduce significantly. Offsite influences: Vehicles, hunters, prospectors. Criteria for selection: P-J woodland in high elevation draw near burn area. Representative of much of the terrain here. Plants: Gray and Green Rabbitbrush species. Pinyon and Utah Juniper both growing to 30' high. Big Sagebrush with young sprouts in disturbed sites. Cheatgrass. Bluegrass. Other observations: Areas in N-W draw are quite windblown. Topsoils are being scoured by wind channel here, putting some stress on the life community. It is possible that Wild Horses come here in certain seasons, e.g. summer to escape heat and insects, which the stronger winds blow off their bodies.

Departure from Expected: 1. N-S; 2. S-M; 3. N-S; 4. 66% BG, M; 5. S-M; 6. S-M; 7. M; 8. M; 9. S-M; 10. S-M; 11. M-E; 12. S-M; 13. S-M; 14. S-M; 15. S-M; 16. N-S; 17. S-M.

**Overall Attribute Ratings: S: S-M; H: S-M; B: S-M. [PHOTO TRANSECT]**

Conclusion: Fairly healthy ecosystem in spite of some major disturbances from OHV vehicles, nearby

road, jeep trails, etc. Good shelter and nesting area for birds in thick P-J grove that provides edible nuts for many species, including the Pinyon Mouse.

**TRANSECT #21:** Location: Sulphur HMA, Utah. Further north on road at a pass on this high valley. GPS: 38.43387 deg. N; 113.88601 deg. W; Elev. 7,003' a.s.l. Temp. 83 deg. F. Obs. Downer. Date and Time: 6/14/2020, 11:23 AM, MDT. Ev. Tr. Size: 100' x 20' at 2% slope E up to W. Soil: P-J and Sagebrush desert loam w/ DG of moderate depth. 63% BG. Utilization: Wood gatherers. Hunters. Campers who left litter including plastic. Criteria for Selection: Representative of a pass and convergent point along this well-graded N-S dirt road w/ PJ woodland and open terrain. This is a place of much transiting by animals, birds and people. Offsite influences: vehicles, visitors, hunters, some domestic cattle and sheep. Animals: Mule Deer – a large Buck spotted. Puma, Fence Lizard, Ravens. Songbirds. Some scant sign of earlier transit by Wild Horses. Observed an “Earth Child” Cricket, aka Common Mole Cricket (*Gryllotalpa hexadactyla*) emerging from deep forest soil. Very shiny. Exquisite creature! **[PHOTO MOLE CRICKET]** Departure from Expected: 1. N-S; 2. S-M; 3. N-S; 4. 63% BG, M; 5. N-S; 6. S-M; 7. S-M; 8. S-M; 9. S-M; 10. S-M; 11. S-M; 12. S-M; 13. M; 14. M; 15. S-M; 16. N-S; 17. S-M.

**Overall Attribute Ratings: S: S-M; H: S-M; B: S-M. [PHOTO TRANSECT]**

Conclusion: Due to less cattle, this habitat is in fairly good condition, but nonetheless vehicles, trash and other disturbing influences by people are of concern and should be corrected, especially Off-Road Vehicle disturbances.

**TRANSECT #22:** Location: Sulphur HMA, Utah. Edge highland meadow with cushion plants, clump grass and some wild horse droppings including from a foal. GPS: 38.45358 deg. N; 113.87505 deg. W; Elev. 6,737' a.s.l. EPE 32'. Temp. 85 deg. F. Ev. Tr. Size: 100' x 20', 12 deg. W up to E. Obs.: Downer, Date and Time: 6/14/2020, 11:45 AM, MDT. Soil: Rocky w/ DG, deep to moderate depth. 40% BG. Utilization: Wood gatherers. OHV recreationalists. Hunters. Prospectors. Lesser Livestock presence. Wildlife species present: Bobcat and Mountain Lion spoor. Various lizards and rodents. Large Desert Cottontail Rabbit (*Sylvilagus auduboni*) seen. **[PHOTO COTTONTAIL]** This fled to a rocky cave. Mule Deer spoor. Pack rate nest. Various songbirds, including Sparrows. Several insect species. Some transitory wild horse spoor. Plant species: Wild Rose, Desert Sage. Big Sagebrush, both mature and young seedlings. Buckwheat (*Eriogonum* sp.). Pinyon Pines, some very old. Utah Juniper w/o berries. Both species to 20' high. Orange and yellow lichen covering boulders. Needlegrass clumps. 7 healthy Green Ephedra shrubs in wash area. Sticky Geranium (*Geranium viscosissimum*) growing in wash. Several Gambel Shrub Oaks growing at base of cliff to east. Acorns are a common food of several species of birds and mammals, but are known

to be poisonous to horses. Offsite influences: Some OHVs destructive of soils and vegetation. Hunters. Plastic and tin can litter. Criteria for Selection: Represents a fairly healthy wildlife habitat with moderate disturbance. Other Obs.: Important shelter area for Mule Deer and other mammals, birds, reptiles, etc. Open P-J woodland. I sense a wonderful natural peace and harmony here, which includes a feeling of ancient Native Americans dwelling here for centuries ... a sense of sanctuary for many species. Departure from Expected: 1. S-M; 2. S-M; 3. N-S; 4. 40% BG, S-M; 5. N-S; 6. N-S; 7. S-M; 8. N-S; 9. N-S; 10. N-S; 11. N-S; 12. N-S; 13. S-M; 14. N-S; 15. S-M; 16. N-S; 17. N-S.

**Overall Attribute Ratings: S: N-S; H: N-S; B: N-S. [PHOTO TRANSECT]**

Conclusion: This is an important habitat for a variety of plants and animals. Here the presence of the Great Rest of Life still prevails over the destructive inroads by people. This is a healing center, a sanctuary.

**TRANSECT #23:** Location: Sulphur Wild Horse HMA, Utah. Further north on road into a broad valley with P-J woodland and open washes. A major seasonal stream here, but no flowing water at present. Much sand and silt deposits. Tall, rugged, rocky peaks of the Needle Range loom just to east. GPS: 38.47708 deg. N; 113.87849 deg. W; Elev. 6,776'. EPE 22'. Ev. Tr. Size: 100' x 20', slope 2% SW down to NE. Obs. Downer. Date and Time: 6/14/2020, 2:11 PM MDT. Obs: Downer. Mild wind arising from the west. Soil: some sandy and some silty deep soil deposits from seasonal stream deposits. Some desert loam. 60% BG. Utilization: OHV recreational vehicles, wood gatherers, hunters, cattle seasonally. Scenic area for photographers. Criteria for Selection: Typical habitat for this broad valley where surface water is evident during heavy rains and Pinyons and Junipers and a variety of shrubs provide considerable intact wildlife habitat. Criteria for Selection: Lower broad valley running N-S with PJ, bushes, seasonal stream and wild horse presence. Major dirt road runs through. Offsite influence: Vehicles, hunters, moderate wood gathering. Campers, ranchers, rock hounds. Some Cattle and ORV have caused significant disturbance to soils and vegetation here. Wildlife, Animals: Mule Deer, songbirds, wild horse spoor, Black-Tailed Jackrabbits (*Lepus californicus*). **[PHOTO B-T JACKRABBIT]** White-Tailed jackrabbits (*Lepus townsendi*) are also present here. They are more nocturnally active than the Black-Tailed Jackrabbits, hence less commonly observed. Tarantula Wasp observed. This is said to have a particularly gruesome way of killing its prey. Plants: Clump grasses including Indian Rice Grass, Fescue. Pinyons to 23'. Similar Junipers also. Green Ephedra. Big Sagebrush. Orange Globe Mallow in blossom, aka Desert Globemallow (*Sphaeralcea ambigua*). This flowers from March to June and has among the largest flowers and is the most drought-tolerant species among the Globemallows. Fiddleneck (*Amsinckia retrorsa*) observed growing in the wash. Desert Sunflower (*Gerea canescens*) **[PHOTO DESERT SUNFLOWER]** also observed

forming clumps in the wash similarly to the Cushion Buckwheat (*Eriogonum ovalifolium*), also present. The latter is a nutritious food for some herbivores including horses. It has a rusty orange color and a round head of tiny reddish to purple to cream colored flowers. Also present: Western Smellowskia (*Smelowskia calycina*) in dry wash amid P-J woodland; Rocky Mountain Rockmat (*Petrophytum caespitosum*) in the Rose family and observed higher up amid boulders; Fragile Prickly Pear cactus (*Opuntia fragilis*); Snakehead (*Malacothrix coulteri*) in dry wash, not in flower; as well as the Yellow Head (*Trichoptilium incisum*) that is in Sunflower family. Quite a variety of plant species, all in all, in this portion of the HMA. Wind and water movement must contribute to this.

Departure from Expected: 1. M; 2. M; 3. M; 4. 60% BG, M; 5. M-E; 6. M; 7. M; 8. M; 9. S-M; 10. M; 11. M; 12. M; 13. M; 14. S-M; 15. M; 16. S-M; 17. M;

**Overall Attribute Ratings: S: M; H: M; B: M. [PHOTO TRANSECT]**

Conclusion: Typical busy, periodically washed habitat with frequent disturbances. One of the most productive areas where I did transect evaluation. This relates to high siltation and nutrient renewal here.

**TRANSECT #24:** Location: Sulphur Wild Horse HMA, Utah. Further north along road from Tr. 23, into denser P-J stands. Area here has more intensive tree cutting and wood gathering. GPS: 38.49714 N; 113.88715 deg. W; Elev. 6,996' a.s.l. EPE: 29'. Date and Time: 6/14/2020, 3:22 PM MDT. 83 deg. F. Obs. Downer. Ev. Tr. Size 100' x 20' with 7% slope, S down to N. Soil: Moderately deep with DG and P-J and brush and grass loam. Utilization: Woodcutters. OHV jeep recreation. Livestock. Hunters. Camping. An earlier human dwelling here has left much old trash including cans and bottles. Criteria to select: Lower, hotter, drier portion of HMA along N-S running road, parallel to Needle Range that lies to the east. Same P-J, bush, grass and fluvial factors as noted in Tr. 23. Offsite influence: Road, vehicles, campers, hunters, livestock, wood gatherers. Wildlife and Animals: Cottontails, Pygmy Rabbits (*Sylvilagus idahoensis*) noted here by spoor among tall sagebrush. This is a dwindling species considered of conservation concern due to lessening numbers and destruction of habitat. Black-Tailed Jackrabbit. Mule Deer. Wild Horse. Pinyon Mouse. Pinyon Jays (*Gymnorhinus cyanocephalus*) – this species is a great disperser of the Pinyon seeds, which it caches, and many go on to germinate. **[PHOTO PINYON JAYS]** The Pinyon “nuts” would be a great substitute for cattle and sheep as far as their potential for being moderately harvested in order to provide food for people while at the same time restoring the native ecosystem. Hawks observed soaring high overhead, including the ubiquitous Red-Tailed Hawk (*Buteo jamaicensis*) as well as the Ferruginous Hawk (*Buteo regalis*). Ravens were seen vigorously flying overhead and calling with a deep croaking sound. Several lizard and snake traces were observed on the ground, as well as large ant mounds.

Plants: Pinyon and Juniper trees, providing important shelter for deer, horses, birds, rodents, lizards, snakes, etc. There are proportionally more Junipers at lower hotter elevations compared to Pinyons. Some Needlegrass clumps and a variety of forbs and bushes similar to Tr. 23.

Departure from Expected: 1. N-S; 2. S-M; 3. N-S; 4. 70% BG, S-M; 5. N-S; 6. M; 7. S-M; 8. S-M; 9. S-M; 10. M; 11. M; 12. S-M; 13. M-E; 14. M-E; 15. M-E; 16. N-S; 17. M.

**Overall Attribute Ratings: S: S-M; H: S-M; B: M. [PHOTO TRANSECT]**

Conclusion: Some portions of this habitat are seriously impacted from vehicles, cattle drives and extractive activities. More control on these activities should be carried out. We must take better care of all public lands with the goal of restoring them as well-functioning natural ecosystems if we are to avert the absolute tragedy that current trends impose, including Global Warming and massive extinctions of species.

**TRANSECT #25:** Location: Sulphur Wild Horse HMA, Utah. Continuing north along road from Tr. 24 at a knoll where P-J woodland peters off and grows thinner and Juniper is more prevalent amid smaller Dwarf Sagebrush and some grasses. GPS: 38.53780 deg. N; 113.88701 deg. W; Elev. 6,666' a.s.l. EPE 22'. Date and Time: 6/14/2020, 4:32 PM MDT. 85 deg. F. Obs. Downer. Ev. Tr. Size: 100' x 20', 3% slope S down to N. Soil: Shallow, stony desert loam with rich humus. 61% BG. Pebbles on surface resist erosion by wind and rain – much of former, little of latter here! Utilization and Offsite influences: Livestock, Vehicles including ORVs, Jeeps, 4WDs. Hunters. A major jeep trail leads off to the east. A wild area of wind scour ca. 50 square feet in diameter is met with here. Criteria for Selection: Represents large portion of northern HMA lying to west of Needle Range. Is the edge of a drop off area where Sagebrush and grasses are more dominant and not many trees are encountered -- even Junipers become infrequent.

Wildlife and Animals: Coyotes observed scampering away. Mule Deer **[PHOTO MULE DEER]**. Desert mice of a variety of species. Badger in evidence. Jackrabbit skull. I observed a Great Basin Gopher Snake (*Pituophis melanoleucus deserticolus*) coming out of burrow to hunt later in day. This resembles a rattlesnake, which is also found here, mainly as the Western Diamondback. A group of Rocky Mountain Elk were spotted far off. Some Wild Horse sign was first observed then a band was spotted using my binoculars. These were running up a long narrow wash far to the WSW and were ca. 8 in number. My presence may have caused them to run in the opposite direction – a very probable indication of persecution by people! Plants: Deer/Bitter Brush (*Purshia tridentata*), **[PHOTO DEER BRUSH]** important food for deer and elk. Dwarf/Small Sagebrush (*Artemisia cana*) present. Utah Juniper to 15' high. Needlegrass clumps. Indian Paintbrush (*Castilleja* sp.) with purple stem. Great Basin Wildrye (*Elymus* sp.)

growing over foot high. Ephedra heavily browsed. Prickly Pear Cactus with bright yellow blossoms also adorned this vast landscape.

Departure from Expected: 1. N-S; 2. M; 3. S-M; 4. 61% BG, M; 5. N-S; 6. S-M; 7. S-M; 8. S-M; 9. S-M; 10. S-M; 11. M-E; 12. M; 13. M; 14. S-M; 15. M; 16. N-S; 17. S-M.

**Overall Attribute Ratings: S: S-M; H: S-M; B: S-M. [PHOTO TRANSECT]**

Conclusion: Though this site has considerable vehicle disturbance, those areas that are untrammelled seem to be holding their own. If the vehicle damage expands, this ecosystem could be devastated and its soils totally destroyed! More control over vehicles and other disturbances, including livestock, is needed. At 4 PM, strong adiabatic winds arose as the day begins to cool; many creatures begin to stir.

**TRANSECT #26:** Location: Sulphur Wild Horse HMA, Utah. Near Gallinaceous Guzzler on lower escarpment further north nearing the valley bottom and still west of the Needle Range. GPS: 38.54880 deg. N; 113.88329 deg. W; Elev. 6,505' a.s.l. EPE 19'. Date and Time: 6/14/2020, 5:07 PM MDT. 83 deg. F. Obs. Downer. Ev. Tr. Size: 100' x 20', 3% slope NW up to SE. Soil: Shallow DG and desert loam with 44% BG. Nearby disruption from vehicles and construction of the Guzzler **[PHOTO GUZZLER]**. Utilization and offsite influence: Heavy human and vehicle traffic nearby and spilling over to transit from OHVs and foot traffic assoc. with Guzzler. Cattle having heavy impact coming into drink. Certain wildlife species also coming into drink here include Mule Deer and Elk, Sage Grouse and Quail. Some Wild Horses are present in area and a band of five are spotted ca. ½ mile to the west (Photos taken). Hunters are very present, as evince their shotgun shells and 30-30 cartridges. Wildlife and Animals: Western Meadowlark singing atop a bush, issuing a delightful, bell-like melody. California Quail. Sage Grouse. Mule Deer. Pronghorn tracks and droppings. Black-Tailed Jackrabbit. Cottontail. Great Basin Rattlesnake. Seed germination of grasses and forbs observed sprouting up from wild horse droppings. Great Basin Collared Lizard. Northern Sagebrush Lizard. Side Blotched Lizard. Northern Desert Horned Lizard. All these were observed. A Badger was encountered at 5:25 PM on my way back to Utah Hwy. 26 in a heavily pounded and overgrazed area that was also badly impacted by vehicles. I followed him to his den with my binoculars then decided to go there and take his picture. Sure enough, as soon as I neared his den and peered down into it, he arose fiercely to bare his teeth **[PHOTO BADGER]**. Much of the lower stretch of the HMA here was fenced and being intensely managed for cattle, not wild horses! Plants: Dwarf Sagebrush over a foot high **[PHOTO DWARF SAGEBRUSH]**. Ephedra heavily browsed. Indian Rice Grass. Great Basin Wheatgrass. Curl-leaf Needlegrass, Great Basin Wildrye – all heavily grazed. Moss growing under Sagebrush. Flowering daisy. Criteria for Selection: Gentle lower escarpment near artificial water



source. Many of these Guzzlers have been constructed in the HMAs to provide more water for wildlife, particularly game mammals and birds. But it appears the wild horses are usually excluded from benefiting from these, as I encountered in other HMAs, such as the Three Fingers HMA of SE Oregon. Typical heavily disturbed areas exist throughout this and other HMAs.

Departure from Expected: 1. N-S; 2. S-M; 3. S-M; 4. 44% BG, M; 5. N-S; 6. M; 7. S-M; 8. M; 9. S-M; 10. S-M; 11. M; 12. S-M; 13. S-M; 14. S-M; 15. S-M; 16. S-M; 17. S-M.

**Overall Attribute Ratings: S: S-M; H: S-M; B: S-M. [PHOTO TRANSECT]**

Conclusion: Due to the presence of the large Gallinaceous Guzzler, the wildlife here appear to be thriving as many come into water. However, the OHV vehicles that come in here are having significant localized negative impact on the vegetation. Several of the lizards observed here are most probably attracted by the water, as is true of many other species, including certain insects, many of which arrive here in winged form. How this device effects the wild horses needs to be critically investigated. And how wild horses can often make more water available for a variety of wildlife species, such as by dint of their wallow, or by their sniffing out and pawing down to water sources in dry areas, or by breaking thick ice with their hooves – all this and more needs to be acknowledged and further investigated.

**APPENDIX B. CONGER WILD HORSE HMA, UTAH, FOUR ECOLOGICAL TRANSECTS**

**TRANSECT CONGER #1:** Location: Near the major, unpaved Little Valley Road on the long southern slope leading toward Conger Springs and Skunk Springs (Camp Canyon). GPS: 39.15008 deg. N; 113.72466 deg. W; Elev. 6,039' a.s.l. EPE 59'. Date and Time: 6/17/2020, 10:43 AM MDT. Temp. 63 deg. F. Obs. Downer. Ev. Tr. Size: 100' x 20', 7% slope SW up to NE. Soil: Wind-scoured, rocky, shallow soil with desert loam, coarse twigs and branches. 70% BG. Desert crust often broken by cattle, OHVs. Mustang dung depot is helping to replenish humus in soil in part of transect. Utilization and offsite influences: Cattle with recent tracks and droppings prevalent. Cattle are overgrazing vegetation. ORV recreation off the designated trails is having major negative impact by compacting soils. Hunter presences is also obvious from discarded shells. Criteria for Selection: Typical habitat including a medium-sized draw on this long escarpment with some recent horse tacks amid numerous vehicle and cattle impacts, yet many plants and animals are still managing to eke out a living, especially hear the wild horse dung depot. Wildlife and Animals: Wild Horses, Mule Deer, Black-Tailed Jackrabbits, Cottontail, pair of Raven, a few sparrows. Several lizards seen including Northern Sagebrush Lizard (*Sceloporus graciosus*), Great Basin Fence Lizard (*S. occidentalis biseriatus*) – both Spiny Lizards. These lizards as well as birds and various plants were all benefiting from the wild horse dung depot, aka “stud pile”. A few grasshoppers observed. Plants: Dwarf Sagebrush (*Artemisia cana*); Big Sagebrush (*Artemisia tridentata wyomingensis*); Needle bunch grass setting seed to 7” high (*Stipa* sp.); Indian Rice Grass [**PHOTO INDIAN RICEGRASS**]; Utah Juniper to 10’ high, providing much needed shelter for wild horses, mule deer, birds, small mammals, etc.; Ephedra being carefully pruned by herbivores; Prickly Pear Cacti; Green Rabbitbrush.

Departure from Expected: 1. S-M; 2. S-M; 3. S-M; 4. 70% BG, S-M; 5. S-M; 6. S-M; 7. N-S; 8. S-M; 9. S-M;

10. S-M; 11. M; 12. N-S; 13. S-M; 14. S-M; 15. S-M; 16. N-S; 17. N-S.

**Overall Attribute Ratings: S: S-M; H: S-M; B: S-M. [PHOTO TRANSECT]**

Conclusion: in spite of impacts, this ecosystem is holding its own thanks in large part to the regenerative influence of the wild horses whose droppings are helping to sustain a variety of plants and animals. Also, the siltation brought during rainstorms to the draw here, including by cloudbursts, is creating several mini dams based on rocks, branches, trees and bushes, which retain silt and help build rich and deep soil catchments. Again, all the various species work together to permit remarkable resilience. Wild scour is a significant factor here.

**TRANSECT CONGER #2:** Location: Further north upslope from Conger #1 is a degraded area that represents much of this landscape. GPS: 39.17515 deg. N; 113.72230 deg. W; Elev. 6,306' a.s.l. EPE 36'. Date and Time: 6/17/2020, 11:41 AM MDT. Obs. Downer. Ev. Tr. Size: 100' x 20', 8% slope NW up to SE. Soil: Severely dry, desiccated and powdery soils with many rocks. The area seems to have been sprayed then seeded to favor livestock forage. Sign of heavy cattle use. 40% BG. Utilization and offsite influence: Heavy livestock and OHV usage, also considerable mining activity, prospecting. Some signs of hunters in form of shells. Criteria for selection: Represents severely degraded habitat due to overstocking of the range and excessive OHV pounding of terrain both on and off established roads. Wildlife and Animals: A few wild horses transiting this area; desert rodents and lizards; ant mounds frequent. Several Townsend Ground Squirrel (*Citellus townsendi*) burrows present **[PHOTO TOWNSEND GROUND SQUIRREL]**. Plants: Tumbleweed frequent. *Halogeton* by side of road. Various spray- or drill-planted grasses for livestock. Most of these grasses are dead above soil surface and including wheatgrass, fescue. Some Winterfat. Cheatgrass prevalent. Mustard forbs proliferating here, to 2 ½ feet high. Horehound Mint (*Marrubium vulgare*) coming up in very degraded soils. This is such a hardy pioneer trying to heal the ecosystem wounds. Its tops are used to treat colds.

Departure from Expected: 1. S-M; 2. E-T; 3. M-E; 4. 40% BG, E-T; 5. N-S; 6. E-T; 7. E-T; 8. M-E; 9. E-T; 10. E-T; 11. M-E; 12. E-T; 13. E-T; 14. M-E; 15. E-T; 16. E-T; 17. E-T.

**Overall Attribute Ratings: S: M-E; H: M-E; B: E-T. [PHOTO TRANSECT]**

Conclusion: BLM needs to make water more available here for all species and not let ranchers take almost all of it! This transect area is severely degraded due to several impinging factors – all consequence of humans trying to alter the natural life community according to usages that are disharmonious with the autochthonous life community. The chief degrading factors here are overstocking by cattle along with herbicide treatment and exotic seeding as well as OHV trammeling of soils and plants. I recommend immediate rest from livestock, curbing of OHVs and letting natural plants and animals here heal the wounds.

**TRANSECT CONGER #3:** Location: Conger WH HMA, Utah at Conger Springs. GPS: 39.18979 deg. N; 113.72351 deg. W; Elev. 6,651' a.s.l. EPE 22'. Date and Time: 6/17/2020, 12:44 PM MDT. Obs. Downer. Ev. Tr. Size: 100' x 20', 5% slope E down to W. 45% BG. Description: A spring that was in BLM's official online description and indicated as providing water for the wild horses here, yet it was completely sealed off and had been for years according to the BLM official I called about this alarming situation. **[PHOTOS CAPPED SPRING]** He acted surprised that I should ask. The water is being piped downslope to fill a giant water tank to water livestock for one of the local ranchers permitted to graze his cattle within the HMA. Some seepage must occur from this vital source, as there was some limited grass as well as

more green and exuberant trees, shrubs and forbs growing here. This is a mecca for rock hounds and mining activity is much in evidence.

Soil: Shallow and dry due to sealed-off spring. Much is degraded to powdery state but was once rich and deep. OHVs have despoiled much of the vegetation by riding over it **[PHOTOS OHV SOIL DAMAGE]**.

There are big fire rings at this site and many of the topsoils have been cleared away. Quite a bit of clay occurs in these soils. Utilization and Offsite influence: Heavy OHV recreation. Caterpillar had recently dozed a large part of the landscape, thus damaging natural flows. Many old beer cans and soda cans and bottles as well as plastic refuse blighted the Spring area. Much rock hounding, hunting, heavy cattle damage. The two rock-hounders, a father and his teenage daughter, said they would like to see more wild horses here and believe these should have access to water at this spring. They were from Salt Lake City. They informed me there was no surface water further up the canyon. The dramatic mountain that looms over this spring to the east has neatly displayed layers of sediments that are very colorful and distinctive. This they called the "Wedding Cake". Loose barbed wire was encountered below a Juniper shade tree – a clear hazard. Criteria for Selection: Major spring in Conger HMA now being ravished by blatant plunder and disregard, especially by BLM officials and livestock rancher operating here (see photos). A wild horse dung depot was encountered lower down. Wildlife and Animals: Cooing of Mourning Dove (*Zenaida macroura*). Some transient wild horses and mule deer tracks and droppings. California Quail (*Callipepla californica*). Cottontail Rabbits observed as well as their "forms" among the thicker bushes and grass. Great Basin Fence Lizard observed hunting for insects, doing pushups to attract flies and gnats. Several songbirds in trees and bushes included musical Song Sparrows (*Melospiza melodia*) **[PHOTO SONG SPARROW]** and Gray-headed Juncos (*Junco hyemalis caniceps*). The difference from the Oregon Dark-Eyed Junco (*J. h. oregonus*) is having gray sides and gray head. Townsend's Ground Squirrel was again present and its burrows. Plants: Rushes (*Juncus balticus*) around the seep. *Halogeton*. Monoecious Utah Juniper (both sexes in same tree). Small grassy mini-meadows here contain Bluebunch Wheatgrass (*Agropyron spicatum*), Giant Wildrye (*Elymus giganteus*) growing to 3', Needle-and-Thread grass (*Stipa comata*), Columbia Needlegrass (*Stipa columbiana*), Creeping Saltgrass (*Distichlis stricta*) and some wild Barley. Bushes around here included Saltbush in badly disturbed areas, Big Sagebrush, Common Rabbitbrush to 3'. Cheatgrass and Wild Mustard were prevalent in disturbed areas. An unusually tall common Rabbitbrush (*Chrysothamnus nauseosus*) with cottony seeds was about 30' high. This bush has bright yellow flowers and seeds which when crushed produce a wonderful pungent odor, that is believed to have medicinal value. The fragrant Common Madia (*Madia elegans*) grew in disturbed sites. It also has a strong pungent smell that, though quite distinct from that of the Rabbitbrush, I found equally as pleasant. It is definitely a pioneer restorer of degraded ground. I also noticed some insect galls, or round infected sites, on some of the bushes. Several rills and incipient gullies were present. The showy Golden Aster (*Chrysopsis villosa*) was in full bloom. Green Ephedra (*Ephedra viridis*) was present. Wildlife and Animals: California Quail, Mule Deer, Cottontail, B-T Jackrabbit, Mole Cricket (*Gryllotalpa hexadactyla*), Dune Grasshopper (*Trimerotropis arenacea* or *T. barnumi*). Lizards. Snakes including Rattlers. Pronghorn droppings.

This official OHV recreation site and intensive cattle ranching are devastatingly impacting the natural life community here.

Departure from Expected: 1. E-T; 2. E-T; 3. E-T; 4. 45% BG, E-T; 5. E-T; 6. M; 7. E-T; 8. E-T; 9. E-T; 10. E-T; 11. E-T; 12. M-E; 13. M-E; 14. M-E; 15. M-E; 16. M-E; 17. E-T.

**Overall Attribute Ratings: S: E-T; H: E-T; B: E-T. [PHOTO TRANSECT]**

Conclusion: It is outrageous that BLM has permitted this wanton despoilation of the Conger Spring in the

heart of the Conger Wild Horse HMA. The rancher needs to withdraw his cattle and the spring needs to be restored, i.e. uncapped, and a healthy spring riparian habitat needs to be allowed to restore itself here. The wild horses and other wildlife species need to regain their balanced natural life community in this sheltered and charming place. Regulations need to be applied to stop OHVs and campers from continuing to trash this formerly natural spring and associated habitat. I recommend fencing out cattle and OHVs for some years to allow this recovery. The old wild horse trap with high posts needs to be taken out.

**TRANSECT CONGER #4:** Location: On high pass following official OHV Route toward Skunk Springs. Flash flood evidence on soils. Sediment left by the flow has intact seeds in the rich soils deposit. Sparse wild horse tracks and droppings. OHV Route #5 heads off toward Skunk Spring. Pinyon-Juniper forest amid Sagebrush. GPS: 39.22721 deg. N; 113.67084 deg. W; Elev. 6,636' a.s.l. EPE 39'. Date and Time: 6/17/2020, 2:59 PM MDT. Obs. Downer. Ev. Tr. Size: 100' x 20', 5% slope NE up to SW. Soil: Shallow and rocky, 55% BG. Wild horse droppings having beneficial effect on soils, vegetation. Utilization and outside influences: OHV recreation. Cattle grazing but to much less degree than other areas. Hunters. Rock hounds. Some mining. Sealed off springs suspect. Area is scenic. After a few hundred meters down in the wash the vegetation becomes much more profuse, related to more moisture accumulation. Criteria for Selection: Represents an area just below a pass where there is a combination of trees and brushes providing shelter from wind and nesting areas. Area is amidst open P-J woodland with a fair number of annual grasses and forbs. Area appears fairly typical and is edged by a deep canyon and rocky bluffs to the east – good habitat for puma and bobcat as well as raptors. Some of the latter's white droppings indicate nesting here. Wildlife and Animals: Red-Tailed Hawk (*Buteo jamaicensis*) and Golden Eagle (*Aquila chrysaetus*) both observed soaring about looking for prey. **[PHOTO GOLDEN EAGLE]** Coyote tracks. B-T jackrabbit. Pinyon Jay (*Gymnorhinus cyanocephalus*) heard nearby. Flock of Quail heard. Some rodents including mice, lizards, grasshoppers and ants. Plants: Pinyon and Juniper trees to 15' tall provide good shelter for horses and deer, etc. The are tall and healthy. Dwarf Sagebrush and Big Sagebrush. Grasses grow from base of bushes, which filter dust from air and help build soils. Several grass species present, including Needlegrass, Foxtail Barley (*Hordeum jubatum*), Great Basin Wheatgrass, Fescue grass – very dry Crested Wheatgrass growing to 3' high. Most grasses are still fairly healthy even though grazed down. Certain clumps left alone, as if instinctively to allow them to set seed. This patchiness of grazing and foraging patterns has been observed in wild horses and permits their long-term survival. *Ephedra viridis*, aka Indian or Mormon Tea, is being browsed moderately. It is a power stimulant. A few Spiny Saltbushes (*Atriplex confertifolia*) **[PHOTO SPINY SALTBRUSH]** in drier, more mineralized soils are displaying their gray-green leaves and spiny branches to ward off herbivores. These bushes are growing beside the road in a very disturbed site due to earlier grading of the road. Departure from Expected: 1. N-S; 2. S-M; 3. S-M; 4. 55% BG, S-M; 5. N-S; 6. S-M; 7. S-M; 8. S-M; 9. S-M; 10. S-M; 11. S-M; 12. S-M; 13. S-M; 14. S-M; 15. S-M; 16. N-S; 17. S-M.

**Overall Attribute Ratings: S: S-M; H: S-M; B: S-M. [PHOTO TRANSECT]**

Conclusion: The minor presence of cattle here, which is hardly noticeable, is allowing a much more healthy and balanced ecosystem. The wild horses are having a beneficial effect here and are not overgrazing the plants. The Mule Deer here also seem to be in good balance with forage plants. The main degrading factor is vehicles, especially those that go off the main road and crush the natural plants and the soils from which they spring and terrorize the animals. OHV recreation needs to be curbed here and it shows how little the Conger wild horses mean to the BLM that officials designated a national OHV recreation site in this HMA!

Additional observations: A possible major spring located in a deep ravine to the east. This shaded area has less evaporation and allows water accumulation. A beautiful Medicine Hat paint mare and her colt were observed on the way out (see Photos). The mare quickly spotted me and retreated with her colt in tow over a ridge and into the cover of Utah Junipers. It was a delight to observe them for ca. a half hour. Their extreme wariness signaled the high possibility of wild horse persecution here, as did that of the other band observed in the morning. **[PHOTOS MEDICINE HAT PAINT MARE AND COLT IN RETREAT]**