

## UW graduate student studies free-roaming horse adaptations

The Bureau of Land Management (BLM) estimates approximately 95,114 wild and free-roaming horses across 10 western states as of March 1, 2020. The population in Wyoming is estimated at 8,706 horses.

Wild and free-roaming horses have adapted to many different environments, including areas with low forage availability, according to Courtney Buchanan.

### Varying environments

Buchanan, a graduate student at the University of Wyoming (UW) in the Depart-

ment of Ecosystem Science and Management, is working to understand how gut microbes in wild and free-roaming horses adapt to different environments and if certain microbe populations encourage greater body condition. She graduated with a degree in animal science from Utah State University before coming to UW to continue her education.

Buchanan collected fecal samples from horse populations in 15 different BLM Herd Management Areas (HMAs) this summer. The

samples will provide information on what kinds of plants the horses consume and what bacteria is present in their digestive system.

HMA environments in her study range from grass-dominated ecosystems to riparian areas and from pinyon pine and juniper ecosystems to the Mojave Desert and shrub/grass environments.

"Horses have overpopulation issues in many areas," Buchanan explains. "We want to learn how these horses are adapting so well to their environments."

### Body condition

Buchanan's study also compares horse body condition score to the amount of forage available or herbaceous cover. While collecting fecal samples, Buchanan scored the horses based on visual appearance of bones and fat cover.

"In our preliminary results, there is a slight trend that environments with higher herbaceous cover contain horses with higher body condition scores," Buchanan explains.

The score for most horses in summer 2020 fell in the

moderate range.

The study relates body condition to forage species richness and diversity, according to Buchanan.

"Horses are generally thought to eat a diet of mostly grass," notes Buchanan. "There have been some studies in the past showing horses eating high amounts of different forbs and sometimes browse."

Logically, inadequate grass supply leads to lower body condition scores, according to Buchanan. She also will determine if the horse diet consists of a greater proportion of browse where herbaceous cover is less.

### Seasonal work

Buchanan hopes to revisit the same HMAs this winter to determine potential seasonal diet shifts from summer to winter associated with shifts in the fecal microbiome.

"We have the potential to see a greater difference in microbial communities coinciding with seasonal diet shifts," she shares.

Buchanan's study is part of a grant studying the gut microbiome of other species, including pronghorn and

mule deer and the toxin tolerance of these species to connect information to different demographics.

Buchanan is advised by Dr. Jeffrey Beck, a professor in the Department of Ecosystem Science and Management. Beck's research focus is wildlife habitat ecology and restoration ecology with a focus on restoring function and structure of wildlife habitats in disturbed rangeland systems, with particular focus on sagebrush habitats.

The project is funded by the Genomes Underlying Toxic Tolerance-Community (GUTT-C) Grant Program with Boise State University and the University of Nevada-Reno as major collaborators with UW. The research team would like to thank the National Science Foundation (NSF) Track Two Wyoming Experimental Program to Stimulate Competitive Research (EPSCoR) Program award number OIA-1826801 for support.

*Averi Hales is the editor for the Wyoming Livestock Roundup. Send comments on this article to roundup@wylr.net.*

## 92<sup>nd</sup> WWGA State Ram Sale a success

On Sept. 15 sheep producers from across the West gathered at the Wyoming State Fairgrounds in Douglas for the 92<sup>nd</sup> annual Wyoming Wool Growers Association (WWGA) Ram Sale. Auctioneer Michael McNamee of McNamee Auction Co. sold 231 head of rams, totaling \$199,950, with an average of \$866 per head across all breeds.

The top selling rams were Lot 11, consigned by

Lance Rabel and Lot 13, consigned by Forbes, Rabel and McGivney Rambouillets. Both rams brought \$2,500.

With an average of \$1,753 per head, Von Krosigk Family Targhees were the high average consigner.

Seven certified rams were sold, totaling \$8,750 and averaging \$1,250 per head.

Rambouillet yearlings grossed a total of \$94,925 for the 115 head sold. The breed averaged \$825.43 per head.

Targhee yearlings grossed a total of \$41,900 for the 28 head sold. The breed averaged \$1,496.43 per head.

Five Columbia yearlings averaged \$940 per head and grossed a total of \$4,700.

Suffolk and Hampshire yearlings averaged \$660.87 per head across the 23 head sold. The breed grossed a total of \$15,200. Suffolk and Hampshire lambs grossed \$10,475 for the 15 head sold and averaged \$698.33 per

head.

Four Hampshire yearlings grossed a total of \$2,050 and averaged \$512.50 per head. Six Hampshire lambs grossed a total of \$2,325 and averaged \$387.50 per head.

Suffolk yearlings grossed a total of \$18,125 for the 25 head sold and averaged \$724 per head, while three Suffolk lambs grossed a total of \$1,500 and averaged \$500 per head.



**Top seller** – One of the two top-selling rams was Lot 11, sold by Lance Rabel. Courtesy photo



**High-selling ram** – One of the top two high-selling rams was Lot 13, consigned by Forbes, Rabel and McGivney Rambouillets. Courtesy photo



**Adobe Town** – Wild and free-roaming horses inhabit many different landscapes, some with limited amounts of forage. Horses in the Adobe Town HMA pose under a rocky outcropping among sagebrush. Courtney Buchanan photo



**McCullough Peaks** – Courtney Buchanan studies the relationship between gut microbes and body condition score along with abundance and diversity of plants available for foraging. Courtney Buchanan photo

## "REAL" Ranch Horse Invitational "Top of the Crop" Video Colt Sale

Bidding opens October 7 - Closes October 10, 2020  
Closes one lot at a time starting at 3 P.M.

- 36 colts from proven programs that have sold horses through the "REAL" Ranch Horse Invitational Sale.
- All colts in the sale will be eligible for the Pine Coulee Bulls /NutraLix Ranch Colt Futurities at the age of 3 years-old.
- 2020 futurity payout was \$8,060.
- Catalog @ montanacattleconnexion.com

### Consignors

Ashley Quarter Horses  
Deer Run Ranch  
Diamond D Quarter Horses  
Dryhead Quarter Horses  
Froelich Quarter Horses  
Kelly Ranch  
Kirkland Ranch  
Nelson Ranch  
Noyes Ranch  
Rawhide Quarter Horses



More info call 406-670-3400 or  
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Catalog and Video Online!  
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## EPA resolves violation

The U.S. Environmental Protection Agency (EPA) has issued a Consent Agreement and Final Order settling a penalty action against Paint Rock Canyon, LLC and C5 Youth Foundation of Southern California, Inc. for failing to monitor drinking water for acute contaminants at the Camp Paintrock facility in Big Horn County.

Under the terms of the agreement, signed and filed on Aug. 27, the owners agreed to properly maintain the water system and to monitor as required by the Safe Drinking Water Act (SDWA) to ensure the drinking water served at the facility meets all regulatory requirements and pay a civil penalty in the amount of \$4,400 for violating previous Administrative Orders issued by EPA.

"EPA is acting to ensure Camp Paintrock takes all necessary steps to monitor the safety of drinking water provided to camp attendees and staff in the future," said EPA Region Eight Enforcement Division Director Suzanne Bohan. "Compliance with Safe Drinking Water Act monitoring requirements is a basic and essential responsibility in assuring drinking water meets public health standards."