Pryor Mt Draft Carrying Capacity Research

2008 HMAP
1981 Ecological Site Inventory, pg. 3

2004 Rangeland Evalutation
Pryor Mountain Range Survey and Assessment 2004
38,000 acres
10 acres p/mare p/month

10 acres per month = 120 acres per horse
38,000 acres divided by 120 = 316 wild horses

PMWHR- Range Evaluation 2004
PG. 32
The 1984 BLM study (HMAP) indicated a total of 2,154 animal unit months (AUMs) of forage on the PMWHR, with 1,823 AUMs being usable. At the time, a 1.25 animal unit factor was used for each feral horse. Taking 1,823 AUMs divided by 12 months gives 151 animal units (AUs). Dividing 151 AUs by 1.25 AUs per feral horse, 121 feral horses could be supported on the PMWHR without habitat deterioration.

The stocking rate for the Forest Service unit is .066 AUMs/acre. Although this is higher than the other units, .066 AUMs/AC. is still not a large number for a stocking rate. This is especially true when you consider it equates to 15 acres necessary to feed one 1,000-pound cow (one animal unit) for one month, or about 10 acres for a PMWHR lactating mare (.69 of an animal unit). The typical concentration of feed on the prairies of Eastern Montana would be around .22 AUMs/acre, or 4.5 acres per animal unit, or about three acres per PMWHR lactating mare per month.

2004 Appendixes

Appendix M: Summary of NRCS Rangeland Inventory Procedures
pg. 105

d. Divide the answer in c. by 793 pounds per animal unit month. (Remember to calculate an Animal Unit adjustment factor if planning for animals other than a 1000pound cow and calf under 4 months old.)

Dear Jared-

I did refer to the 2004 Rangeland Survey and Assessment before I wrote you. That's why I wrote you. Those questions were not answered.

For example, the Pryor Mt. AUM allocation was determined to be 1.25 AUMs per horse without a weight alloction on the horses. Considering that in the 2004 doc., it stated that 1 AUM was based on a 1,000 lb cow + calf under 4 months, I wondered why the Pryor horses were considered so much "heavier" than a cow as their Spanish Ancestry is generally known to be of a smaller size, so why would they require 25% more forage than the cow AND the calf?

So you are telling me that in all the studies done on the Pryor Mt. wild horses, no one has EVER weighed them?

According to Appendix M: Summary of NRCS Rangeland Inventory Procedures (pg.105), part of the formula used (see d.) stated: "divide the answer in c. by 793 pounds per animal unit month (Remember to calculate an Animal Unit adjustment factor if planning for animals other than a 1000 pound cow and calf under four months old).

Based on the weight measurements currently being used, BLM had estimated forage requirements for the Pryor herds was based on a 1,250 pound horse (approximately 33% more) than the standard application of 793 pounds in the formula presented in the 2004 doc. you have referred me to as providing the answers to my questions.

So help me to understand....The AML established in 1984 at 121 wild horses using a method that determined an 800-900 pound horse was eating the equivalent of a 1,250 cow (1.25 AUM p/horse) and this resulted in having to adjust the AML downward to the current 105. Is that correct?

Did BLM still use the 1.25 AUM allocation to determine the AML of 105?

So how many POUNDS of forage does BLM project a Pryor Mt wild horse eats in the course of a month?

As to the forage pounds per acres, I have reviewed the 2004 doc. extensively and while examples are given as to HOW to determine proper carrying capacity, forage p/acre, stocking rates, slope accessibility, etc., (Appendix M, pg. 101)there was NO clear forage pounds per acre provided for the Pryor Mt Wild Horse Range as a whole based on the forage productions provided in Apendix B - M.

What was provided was a "standard"

What was provided was (pg. 32) that a 1984 study indicated that a total of 2,154 AUMs were available with 1,823 AUMs being usable. However, there is no reference, formula

or anything else that indicates WHERE BLM determined that 2,154 AUMs was available or WHY only 1,823 was considered "usable".

Yet under Grazability Models, it states the total AUMs on the PMWHR is 1,132 AUMs (+ or - 20%) and that this AUM measurement has now become 100% of the grazability, not 2,154 as was measured in 1984.

In the section titled, Forage Requirements (pg. 1), a 2003 estimate was provided stating that there were an estimated 161 total wild horse population and an estimated forage requirement of 1,189 AUMs to sustain 161 horses over a twelve month period that was suppose to be provided on Table 1, pg. 40 but whole sections are missing of the 2004 Rangeland Health Assessment available on line.

Specifically, the same 17 pages are repeated with each of the following links:
Cover, Table of Contents, Abstract
Introduction,
Study Area
Methods
Results and Discussion
While Management Considerations are repeated twice with the Acknowledgements section provided twice.
The Reference Section, Tables and Figures sections all contain the same Maps and Charts,

As near as I can figure, pages 1-17 are missing and pages 35-78 are also gone. There may be more due to the high level of redundancy of publishing the same document under different headings....

However, in order to determine AUMs available (at least the preliminary step before calculating accessibility, utilization levels desired, etc.), the very first requirement (see Appendix M, pg. 105) is it is necessary to determine the total pounds per acre of available forage.

Appendix A, lists pounds per acre but then switches formulas to % ALLOWABLE, not AVAILABLE, on grasses and shrubs with no entry on forbs at all.

There are extreme variations between pounds per acre and stocking rate as well. For example, Penns Cabin Inventory, TR# 101 cites 524 pounds as forage production per acre but assigns it a stocking rate AUM/AC of .2
while TR#105 cites 625 pounds as forage production per acre but still assigns it a stocking rate AUM/AC of .2 as well.

TR#104 shows 454 total production pounds per acre but forage production is only 70 pounds per acre, despite having the same percentage of grass (6%) and 8% forbs that TR#101 is showing as 0% for forbs.

----- Original Message -----

From: Jared_Bybee@blm.gov

To:

Cc: Jim_Sparks@blm.gov

Sent: Wednesday, April 16, 2008 11:52 AM

Subject: Re: Pryor Mt Wild Horses

C,

In response to your inqiry,

1.The Pryor Mountain Wild Horses are generally 13 to 14 hands in size. I'm not sure anyone has ever weighed one but it has been estimated an adult weighs approximately 800 to 900 lbs.

2. The pounds of forage per acre varies widely depending on individual ecological sites, aspect of slope, elevation, soils, average precipitation for each type of plant community, micro climates, ecological condition, dominate plants, desirable forage species present, use patterns and other factors. The NRCS study in 2004 "Pryor Mountain Wild Horse Range Survey and Assessment" described and summarized much of this information. Please refer to that study on the Billings Field Office web site
http://www.blm.gov/mt/st/en/fo/billings_field_office/wild_horses/2004_assessment.html

3. The 2004 NRCS study titled "Pryor Mountain Wild Horse Range Survey and Assessment" discussed this topic to a certain degree, Please refer to that document through the link provided above.

4. The NRCS report went into this topic. Once again it depends on the same factors as number 2 above, also 100% of all forage isn't available due to allowable use levels. Since many areas of the horse range don't have high amounts of forage on it due to the nature of rocks, junipers, shrubs, Douglas fir, limber pine, poisonous plants (i.e. lupine, camas,) and low production in many areas acres per AUM can be very high. Also carrying capacity isn't determined by this factor alone since the areas that recieve the heaviest use determine how many animals can utilize a given area.

5. The NRCS has site guides for each MLRA or Major Land Resource Area or Specific Soil Survey Unit which is usually by county. The BLM uses these guides to help determine ecological condition. The Pryor Mountain Wild Horse Range is in MLRA 32 Northern Intermountain Desertic Basins and MLRA 43A Northern Rocky Mountains and Bighorn County Wyoming and Carbon County Montana. The specific ecological site guides can be used in conjunction with the NRCS Report Pryor Mountain Wild Horse Range Survey and Assessment to compare

production value's related to precipitation as well as ecological condition. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx This link will take you to the NRCS soil survey website where soils and ecological sites are described.

Please refer to the PMWHR Evaluation as well for any questions you may have.

Jared Bybee

To <Jared_Bybee@blm.gov>
cc <Jim_Sparks@blm.gov>
Subject Pryor Mt Wild Horses

04/15/2008 11:26 AM

Dear Jared-

I would like some information about the Pryor Mt Wild Horses and the Range.

1. What is the average size/weight of a Pryor Mt wild horse?

2. What is the calculated pounds of forage per acre in the PMWH?

3. How many acres have been determined to be inaccessible to the PM wild horses via slope % and topography and/or how many acres were determined as available for wild horse use?

4. What is the calculated acres required to provide an AUM in the Pryors?

5. Has a "range" been established of forage production due to environmental flucutations under dry, normal and good years? Such as during dry years, annual forage production is about 1,000 pounds of forage per acre, normal years is 1,400 and good years is 1,800 kind of thing? If so, which document has that been established in and is it accessible on line?

Thank you very much for your time. Your time is appreciated.

Sincerely,
C